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REPORT
OF
DEPARTMENTAL COMMISSION
ON THE
OFFICIAL STATISTICS OF CANADA
WITH
APPENDIX CONSISTING OF NOTES OF EVIDENCE

Published by Authority of the Hon. George E. Foster, M.P.,
Minister of Trade and Commerce.



OTTAWA
PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY
1913

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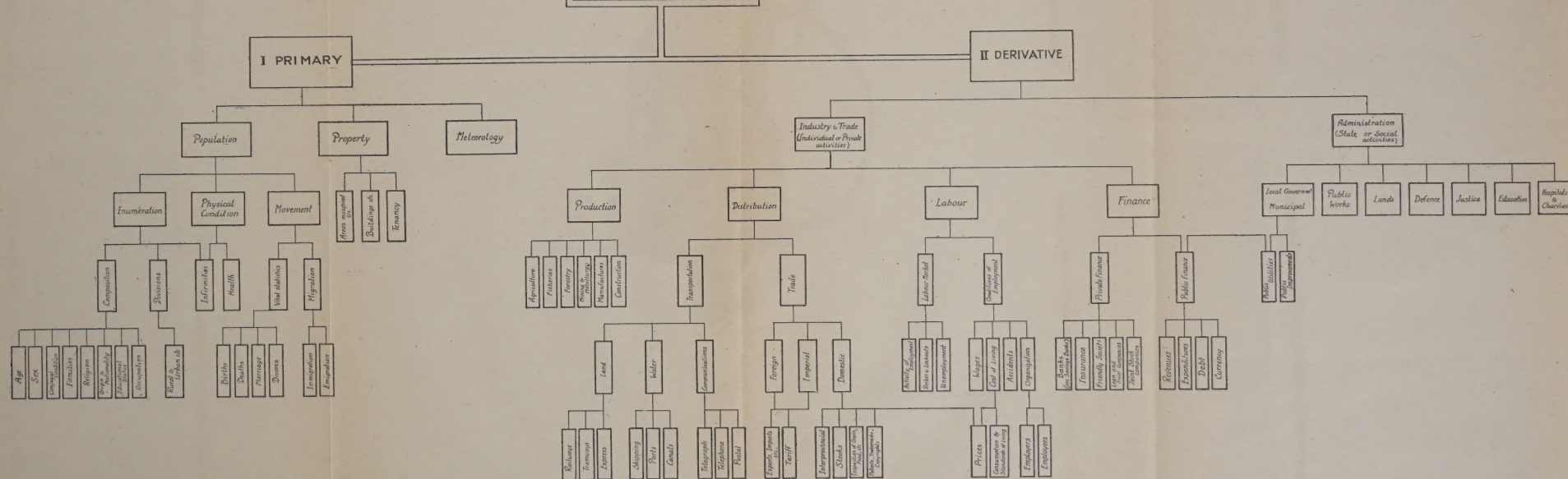


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STATISTICS OF CANADA



NOTE. The above diagram is presented as offering a suggestion of the field to be covered by an adequate system of Canadian Statistics, the several divisions being grouped to indicate their reciprocal relationship. The general plan of the diagram will be apparent. PART I is devoted to the "primary" statistics of population, land areas, etc. PART II is devoted to "derivative" statistics, that is, statistics of social and industrial activities, these being further divided into statistics of private and of public activities. Certain sections, it will be observed, involve a larger statement of detail than others; but this is not meant to imply that greater importance is attached thereto, the principle adopted being to represent subdivisions only when radically different kinds of statistics are concerned. Thus statistics of distribution are shown on the plan in a larger number of subdivisions than statistics of production, though the latter would probably be more elaborate than the former.

TABLE OF CONTENTS.

Report.

	PAGE.
DIAGRAM OF STATISTICS OF CANADA	<i>Frontispiece.</i>
REPORT OF DEPARTMENTAL COMMISSION	5-25
Order in Council, May 30, 1912	5-6
Text of Reference	5-6
Procedure	7
General Observations	7-8
Statistical Organization	9-11
Population	11-13
The Census	11-12
Vital Statistics	12
Emigration	13
Annual Estimates of Population	13
Municipal Statistics	13
Production	13-17
Agriculture	14-16
Forestry, Fisheries and Mines	16
Manufactures	16-17
Transportation	17
Trade and Commerce	17-22
Foreign Trade	18-20
Interprovincial Trade	20-21
Stocks of Grain	21-22
Tariff Statistics	22
General Organization	22
Miscellaneous Economic Statistics	22-23
Wages	22
Household Expenditure	22
Industrial Accidents	23
Prices	23
Education	23
Miscellaneous	23
Publications	24
Summary of Recommendations	24-25

Appendix.

APPENDIX	27-72
Statistics of Population	27-34
Statistics of Enumeration	27
The Canadian Census	27-28
Recommendations of the International Statistical Institute.....	28-29
Census Methods in Other Countries.....	29-30
United Kingdom	29
United States	29
Australia	29-30
France	30
Belgium	30
Germany	30
Austria	30
The Census and General Statistics	30-31
Vital Statistics	32
Migration	32-33
Municipal Statistics	33-34
Production	34-51
Agriculture	34-45
Census Statistics	34-35
Dominion Monthly Crop Reports	35-36
Provincial Statistics and Crop Reports	36
Prince Edward Island	36
Nova Scotia	37
New Brunswick	37
Quebec	37
Ontario	37-38
Manitoba	38
Saskatchewan	38-39
Alberta	39-40
British Columbia	40

	Page.
Production—Continued.	
Differing Results	40
Census Statistics and Census Office Estimates	40
Census Office Estimates and Provincial Statistics or Estimates	40-41
Census Figures and Provincial Statistics or Estimates	41-42
Agricultural Statistics of the Indian Reserves	42
International Crop Reports and Agricultural Statistics	42
Official Prices of Grain	42-43
Resolutions of the International Statistical Institute	43
Statistical Conditions in the West of Canada	43-45
Crops and Statistics	43
Areas sown and Condition during Growth	43-44
Total Volume of the Crop and its Disposal	44-45
Live Stock	45
Fisheries	45-46
Forestry	47
Mining	48-49
Dominion Report on Mineral Production	48
Provincial Statistics	48-49
Census Statistics of Mining	49
Manufactures	49
Massachusetts Census of Manufactures	49-50
Building Construction	50-51
Transportation and Communication	51-52
Land	51-52
Water	52
Postal Statistics	52
Trade and Commerce	52-58
Foreign Trade	52-58
Trade and Navigation Report	52-53
Origin of Imported Goods	53-54
Destination of Exports	54
Trade and Commerce Report	54-55
Trade and Commerce Weekly	55
Discrepancies in Trade Returns of Different Nations	55-57
Trade of Argentine Republic	58
Internal Commerce of the United States	58
Patents, Copyrights, Trade Marks, Industrial Designs and Timber Marks	59
Inland Revenue	59
Labour	59-62
Statistics of Industrial Accidents	60-61
Statistics of Labour Organizations and Employers' Associations	61
Statistics of Wages and Cost of Living	61-62
Finance	62-64
Banks	62
Insurance	62-64
Friendly Societies	64
Building Societies, Loan and Trust Companies	64
Joint Stock Companies	64
Education	64-65
Crown Lands	65-66
Justice	66-67
Criminal Statistics	66-67
Criminal Statistics in Canada Year Book	67
Statistics of Penitentiaries	67
Royal Northwest Mounted Police	67
Common Jail Statistics	67
Hospitals, Charities, etc.	67
Public Defence	67-68
Militia	67
Royal Canadian Navy	68
Statistical Publications	68
Meteorology	69
Statistical Organization in Other Countries	69-72
United Kingdom	69-70
United States	70-71
Egypt	71
References	71-72
United Kingdom	71-72
United States	72
Egypt	72
INDEX	73-75

REPORT

To the Honourable

GEORGE EULAS FOSTER, M.P.,

Minister of Trade and Commerce,

Ottawa.

SIR,—In accordance with instructions contained in Order in Council No. 1,485, dated May 30, 1912, appointing the undersigned a Commission to inquire into the Statistics of Canada, we have the honour to present the following report:

REFERENCE.

The Order in Council referring to the Commission is as follows:

[1,485]

AT THE GOVERNMENT HOUSE AT OTTAWA.

Thursday, the 30th day of May, 1912.

PRESENT:

HIS ROYAL HIGHNESS THE GOVERNOR GENERAL IN COUNCIL.

On a report, dated May 28th, 1912, from the Minister of Trade and Commerce, submitting that he finds that with the exception of the enumeration and the compilation of the decennial census returns, no comprehensive system at present exists for the collection and publication of the statistics of production and distribution of Canadian commodities within the country itself, a matter which appears to him to be essential to the proper appreciation of our own resources and the proper direction of our industrial trade development.

The Minister states that some statistical work is being more or less effectively performed in several departments of the Government along the lines of external trade interchanges, crop reports, railway, canal and labour statistics, the wholesale prices of commodities, etc., but that in some respects duplication of effort and diversity of results are apparent.

That the several Provinces are more or less engaged in the collection of statistical information relating to Provincial conditions and development, and in some instances these duplicate the work done by the Dominion Departments, and in others afford valuable assistance to work that would be contemplated in any complete system of general statistics; that a measure of co-operation and collaboration, which would

avoid duplication of results and combine the efforts of both Provincial and Dominion authorities in the production of reliable and complete statistical information, is in the highest degree desirable, and could be effected in this way with the greatest economy.

The Minister considers that Canada needs a modern and up to date system for collecting and publishing comprehensive and reliable statistics of the production and distribution of commodities in Canada, the volumes, values, and points of origin, and points of destination of imports and exports, the cost of transport, both inside and outside Canada, with such information as can be obtained as to cost of labour and prices of commodities at home and abroad, and that this can best be obtained through a central and co-ordinated branch.

The Minister, therefore, recommends:—

First: That a Departmental Commission be appointed to inquire into the statistical work now being carried on in the various departments, as to its scope, methods, reliability, whether and to what extent duplication occurs; and to report to the Minister of Trade and Commerce a comprehensive system of general statistics adequate to the necessities of the country and in keeping with the demands of the time.

Second: That he be authorized to communicate with the various Provincial Governments with a view to ascertaining what branches of statistical work are being conducted by the provinces, the methods used therein, results attained, and to what extent these may assist in or may duplicate work now being done by the Dominion Government. On the basis thus afforded, conferences might take place, having in view the co-operation of both Provincial and Dominion Governments in the production of a body of statistical information which would be of the utmost use to all.

Third: That this Commission consist of:

RICHARD GRIGG, Commissioner of Commerce, Chairman; Prof. ADAM SHORTT, Civil Service Commissioner, ERNEST HENRY GODFREY, Census and Statistics Branch, W. A. WARNE, Statistical Branch, Trade and Commerce, ROBERT HAMILTON COATS, Department of Labour, JOHN R. K. BRISTOL, Department of Customs.

That C. H. PAYNE, of the Department of Trade and Commerce, act as Secretary to the Commission; and that it report to the Minister not later than 15th September, 1912.¹

The Committee, concurring in the Report of the Minister of Trade and Commerce, submit the same for approval.

RODOLPHE BOUDREAU,
Clerk of the Privy Council.

¹ Time subsequently extended to December 1, 1912.

PROCEDURE.

In carrying out the above instructions, meetings of the Commission for the purpose of taking evidence and otherwise considering the matters submitted were held on the following dates: June 5, 7, 12, 17, 20, 25, 28, August 19, 22, 29, September 27, October 14, 24, 29, and November 1, 5, 8, 11, 14, 18, 19, 20, 21, 22, 23, 27, 29, 1912.

Inquiries into special features of the subject were conducted by individual members of the Commission. In this connection personal visits were made to the various Departments of the Dominion Government, and interviews were held with representatives of Provincial Governments. Several officers of the Dominion Government gave valuable evidence at meetings of the Commission; but it was found impracticable in the time at the disposal of the Commission to take exhaustive formal evidence in this way from all the different Statistical Branches of the Dominion Government. Correspondence and conferences have taken place with Dominion and Provincial Departments engaged in statistical work and also with numerous public bodies and individuals, including educational colleges, boards of trade, railway companies, societies, the publishers of trade journals and others interested in the official statistics of the country.

The first duty of the Commission, as set forth in the reference, was to examine into the scope and methods of the official statistics of Canada and to report a comprehensive system of general statistics adequate to the necessities of the country.

In view of the extent and varied nature of the field covered it will easily be understood that a considerable body of information was brought together in the course of the inquiry. Much of this, though of marked interest and importance, is in the nature of detailed statement of facts, and its inclusion would overload a report such as the present. It was thought advisable, accordingly, to present it in an Appendix taking the form of a series of notes on the conditions found to exist in the main branches of statistical inquiry in Canada,—the notes in question to be in the way of a résumé of the evidence collected by the Commission. It is not to be understood that the Commission regard these notes as exhaustive, though as complete a review of the field was made as the time at their disposal allowed; they aim rather to present certain salient features of the situation and such characteristics as appeared suggestive or typical,—the whole to be considered as the basis to a large extent of the observations and recommendations which follow.

In conducting our investigation and more particularly in framing the above-mentioned notes of the evidence, it seemed preferable to proceed according to subject matter rather than by departmental organization. An outline of the field to be covered by an adequate system of Canadian statistics was accordingly at an early stage of the investigation drawn up, in order that the Commission's review of the subject might be, from the outset, on an organized and logical basis and against a sufficient general background. This outline, in the form of a diagram, is presented as the frontispiece of the report. Definite classification in so complicated a field is difficult; but the diagram aims at showing the main divisions of the subject, their interdependence and reciprocal relationship. It may thus serve as a suggestion in response to that part of the reference which requires the Commission to report a scheme of general statistics. It will also explain the arrangement followed in presenting the matter of the report and of the notes of evidence found in the Appendix.

GENERAL OBSERVATIONS.

Whilst, as above stated, the Commission have thought it useful to present separately the outstanding facts as to each division of the field, certain generalizations, based on recurrent features and broadly interpretive of their significance, may be

permitted, especially in view of the statements contained in the first three paragraphs of the reference, the truth of which our inquiry enables us to confirm.

Though many of the statistical reports issued by various departments and branches are of undoubted excellence and value, there is apparent in the body of Canadian statistics, considered as a whole, a lack of coherence and common purpose. This is traceable to imperfect appreciation in the past of the fact that the statistics of the country, whether the product of one agency or several agencies, should constitute a single harmonious system, with all divisions in due correlation. Under the British North America Act, 1867, the Dominion is given specific authority to deal with 'statistics,' and while this must not be regarded as precluding statistical activity on the part of local governments it does apparently imply that statistics are a matter of national concern and may therefore properly come under the general co-ordinating authority of the Federal Government. No such view-point or function, however, has in the past been assumed by the Dominion. On the contrary each department or branch, charged either directly or indirectly with statistical investigation, has concerned itself primarily with the immediate purpose only in view. This is, from the usual standpoint, quite as it should be: a department is not to be expected to regard points of view beyond the scope of the administration assigned to it. Nevertheless, the effect statistically has been to inculcate routine and the neglect of opportunities for furnishing wider information and service.

While this detachment has characterized the departments of the Dominion Government, still more has it been evident as between the several provinces and the Dominion, and between province and province, notwithstanding that the national importance of many of the functions of the provincial governments under Confederation calls urgently for statistical uniformity and homogeneity. This general condition we would consider to be the fundamental defect which must be met and overcome in the existing situation. Some of the unfortunate results which have followed may be briefly noted.

(1) The scope of Canadian statistics has been restricted. On not a few points of vital interest to the country little or no statistical information exists in a form suitable for practical application. There has been no general comprehensive answer to the question, What statistics should a country such as Canada possess? *i.e.*, What are the phenomena requiring the scientific measurements supplied by statistics if Canadian national development is to proceed to the best advantage? It may be argued that the demand for statistics may be trusted to create the supply; but to wait for the occasion to arise is often to be too late, and such a policy precludes the growth of a statistical system along consistent and logical lines.

(2) Where the statistical activities of several bodies working along similar lines are virtually independent, duplication is inevitable. The notes of evidence show many cases both of actual duplication and of serious waste of effort through lack of co-operation between statistical authorities.

(3) The statistics are unequal in quality and value. There are instances, both Dominion and provincial, of imperfect statistical method resulting from (a) lack of expert knowledge of the subject under investigation and (b) lack of appreciation of the nature and conditions of statistical measurement. The absence of leadership is nowhere more apparent than in the varying extent to which statistical methods have been developed in different branches. The whole question of reliability is involved in this. Without careful adjustment of method accuracy is impossible. On such a point no more severe criticism is possible than the statement that room for improvement exists.

(4) The restriction of outlook has impaired promptitude in the issue of reports. Many statistics lose a large part of their value after a comparatively short lapse of time. Especially is this true in a rapidly-growing country like Canada.

(5) Lack of unity and co-ordination prevents true comparisons between Canada and other countries. The recent growth of international trade and intercourse has rendered such comparisons more than ever necessary, and they have become indispensable to the national progress of Canada.

STATISTICAL ORGANIZATION.

On the subject of general statistical organization the Commission recommend as follows:

(1) That there be created a Central Statistical Office to organize, in co-operation with the several departments concerned, the strictly statistical work undertaken by the Dominion Government.

The object of this organization should be to co-ordinate the statistics of Canada under a single comprehensive scheme and so to extend them that they may meet the present needs of the country and follow the probable course of its development. To borrow a phrase employed in a similar connection by an eminent statistician, the object of such a reorganization should be primarily to constitute a 'central thinking office' on the subject of the statistics of Canada. Describing the possible functions of such an office in Great Britain, Mr. Bowley wrote¹:

"Such an office must have cognizance of all the statistics of more than departmental importance which are published officially. . . . Misleading statistics must be suppressed, overlapping must be stopped, careful plans must be devised for filling in the gaps at present left and preparations made for investigation of matters likely to become of public importance. All Bills involving or affecting the collection of statistics should be considered by it. . . . Publications for the use of the public should in some cases be edited by it, with careful definitions, and with short analysis and criticism, stating accurately and intelligibly the purport and meaning of their contents; in other cases, where a department already exists for such publication, there should be co-operation with a view to carrying out the purposes already indicated."

This so well expresses our own views as to the scope and functions which the proposed Canadian Office should assume that we cannot do better than allow it to stand as a part of the report, adding that the examples of Germany and Australia show that the idea is both practicable and valuable.

(2) In order to give effect to this recommendation it may be necessary to enact fresh legislation or to amend the present Census and Statistics Acts.

(3) The Central Office referred to should, we think, carry out the general policy and the various specific recommendations of the present report.

In its performance of this duty we would suggest the following procedure: In the first instance the Office should formulate a complete system of Canadian statistics, using as a basis from the standpoint of subject-matter the plan prefixed to the present report. More minute examination of the field will be necessary than that which the Commission have been able to give; and there must especially be borne in mind the additional object of determining the agencies best qualified to cover the several subdivisions and the precise manner in which the data of each subdivision shall be collected, compiled and published. Though the Office should itself constitute the main statistical agency for the Dominion, it is essential that statistics should in every case be collected and analysed by those who have a full and expert knowledge of the phenomena they illustrate.

In the proposed organization for co-ordinated action in the issue of statistics the Office will require to collaborate with two series of authorities, namely, (1) Departments of the Dominion Government and (2) Departments of the several Provincial Governments. Among statistics to be covered by Dominion Inter-departmental arrangement would be included statistics of trade, transportation, labour, immigration, certain branches of production, etc.; while subjects which would fall to be treated by arrangement with provincial departments would include agriculture, education, health, finance, industrial accidents, public lands, vital statistics and others.

¹The Improvement of Official Statistics, by Arthur L. Bowley, M.A., *Journal of the Royal Statistical Society*, Vol. LXXI, Pt. III, September 30, 1908, p. 478.

With regard to the means of securing the co-operation of each of these two series of authorities, a word may be said in turn.

For the statistics issued by the Dominion Government, it should be the aim of the Office to keep in close touch with all departments engaged in statistical work, with a view to the permanent prevention of overlapping and duplication. To facilitate this the Commission suggest the formation of an Inter-departmental Statistical Committee to consist of representatives selected from the Central Statistical Office and from other departments engaged in the collection of statistics. The duties of such a Committee should be deliberative and advisory rather than executive. They should include the making of recommendations to the following ends:

(a) The prevention of duplication and of conflicting results.

(b) The better adaptation of statistical material obtained in one branch to the needs of another.

(c) The establishment of uniformity of definitions and methods.

(d) The insuring of expansion and development along proper lines, including the suggesting of new work and the apportionment of such work among the branches best equipped to carry it out.

(e) The supervision of the various statistical publications, with a view to the proper distribution of statistical information and in particular the exercise of supervision over the scope and arrangement of the Canada Year Book.

Such a committee would form an effective medium for the exchange of departmental views and the unification of statistical policy. Committees of this kind now in existence in several European countries have done admirable work.

Co-operation with the provinces will involve two classes of statistics. First, those which the Dominion collects and which may or may not be duplicated by the provinces, and in which co-operation would produce better results, and, secondly, those which the provinces alone collect, but for which it is desirable to have some central organization to co-ordinate the statistics of the provinces for the purposes of comparison *inter se*.

In attempting to secure a working plan for interprovincial co-operation in the issue of statistics it would be desirable to consult in some detail with the various provincial governments and departments, with a view to the calling of a Conference for the adoption of a final policy. Such a Conference, with the completion of a working arrangement, might assume a permanent form,—the Dominion Inter-departmental Committee being a part of it,—and should meet periodically for discussion and for the adapting of statistics to changed conditions.

The Commission do not underestimate the difficulties involved in the attempt to secure unanimity of action where, as in this case, several interests are concerned. Those interests, however, are not diverse but common. It is not proposed that the work of any department, Dominion or Provincial, should be hampered or encroached upon. Rather the opposite is intended, viz., that further significance and utility should be imparted to that work. There is abundant evidence to show that the Dominion departments engaged in statistical inquiry find that the present lack of co-ordination prevents good work. The Commission also believe, as a result of inquiries, that the provinces will be found desirous to further in every way possible a project which would be not only to the general advantage of the Dominion but also to that of each of the several provinces themselves through the possibilities it opens for the making of comparisons and generalizations. We believe that if proper methods are employed Dominion and provincial co-operation will be easily attained, especially in the light of what has been accomplished recently along similar lines in Australia where there existed a more complex series of State systems to reconcile and co-ordinate.

We regard the lack of national statistical direction and initiative, to which we have drawn attention, as the feature which chiefly calls for remedy in existing conditions. There are, however, a number of points to which we desire to refer in more specific terms, either as illustrating the generalizations made above, or as involving some question of organization or point of view which could not find a place among

the statements of fact contained in the Appendix. Needless to say, these are not intended as criticisms individually applicable to officials charged with statistical administration.

POPULATION.

The Census. The important place which the Census occupies in any general statistical system warrants a careful examination of its organization and methods in Canada.

We are of the opinion that a careful delimitation of the field to be covered by the Census proper is called for at the present time. The complexity of the present Census, and the extent to which its schedules have grown, are apparent. The Canadian Census of 1911 was taken on thirteen schedules with an aggregate of 549 questions, whereas twenty years ago only nine schedules, aggregating 216 questions, sufficed. This complexity, by unduly increasing the demands made upon enumerators and the public, involves risk of confusion and inaccuracy. At the same time it is necessary to explain that no diminution in the amount of information is required by the country. The origin of the difficulty would seem to be this: As the work of enumerating and classifying the population originally assigned to the Census Office is carried out, opportunity appears for the collection of other data, notably facts relating to industrial conditions. By degrees the amount of this second and essentially different class of matter is multiplied, with the final result that the task of the Census becomes greatly enlarged, and the point of view with regard to it altered, while the new matter remains inadequate from the new industrial point of view.

In the opinion of the Commission it would be advisable to regard the Census as limited for organization purposes to the enumeration of the population and of certain property, such as lands and buildings, and to set apart definitely under a separate scheme those statistics which more specifically bear on industrial conditions.

Owing to the large exodus from cities to summer cottages situated in rural districts, the taking of the Census in June instead of April renders difficult an accurate classification of the population by urban, rural or other boundaries.

Enumeration is now effected upon what is known as the *de jure* system, by which the population is numbered according to the habitual place of residence. It is not, we believe, the system best calculated to ensure accurate statistics of population, especially when the duty of recording entries is thrust entirely upon enumerators instead of upon householders or heads of families. Where, as under this system, a considerable time elapses before the enumerator is able to complete his work, the maximum risk of errors in omissions and duplications is incurred, whilst the impossibility of the return by the enumerators of accurate answers to the questions of the schedule in those numerous instances where the heads of families happen to be absent when the enumerator calls, introduces another element of uncertainty as to the reliability of the data furnished. The *de facto* system, employed in Great Britain and other parts of the Empire, and the collection by the enumerators within two or three days of the date of the Census of the schedules as completed by householders, secures, we believe, more accurate and reliable results; and we suggest that the question of adopting this system, or possibly some combination of it with the *de jure* system, should be considered in connection with the arrangements for any future Census.

The desirableness of a quinquennial instead of a decennial Census is frequently urged by statistical authorities, and a quinquennial Census is already as a matter of fact taken in France and Germany. Other than statistical considerations may enter into this question as affecting Canada, and the matter of cost also demands consideration; but subject to these points the Commission recommend a quinquennial Census for the Dominion of Canada, particularly having regard to the increased importance of immigration and the internal movement of population. We may point out that for the three Northwest Provinces of Manitoba, Saskatchewan and Alberta

a census of population and agriculture only, in the fifth year from each decennial census, is provided for under the Census and Statistics Act. Therefore the adoption of a quinquennial census of population for the whole of the Dominion would constitute the extension of a principle which has already been adopted for the three North-west Provinces.

Our attention has been drawn to a communication received from the Royal Society of Canada deprecating the restriction of the compilation of Census results to counties as in 1901, and urging the importance of restoring the previous classification by subdistricts for the Census results of 1911. We understand that arrangements have already been made to revert to the smaller unit for the compilation of the Census of 1911.

In some countries cards have been successfully employed for the collection of Census data, and the question of their adoption in Canada appears worthy of consideration.

In connection, therefore, with the Census, we beg to submit the following recommendations:

(1) That the date for the holding of the Census be reconsidered with a view to ensure the best time for securing accuracy of enumeration.

(2) That in connection with the preparations for any future Census fresh examination be made of the systems and methods employed by other countries, with a view to the adoption or adaptation of such of them as may appear to suit conditions in Canada.

(3) That Census commissioners and enumerators should be selected from the most suitable candidates, and that wherever possible the services of local government officials should be secured, with the object of accumulating experience and obtaining greater continuity of Census executive administration. On this point we recommend that the Civil Service Commission be asked to report on a method of appointing local commissioners and enumerators. The same procedure should, we consider, be adopted in the case of all local officers engaged by the Dominion Government for statistical inquiries, such as fishery inspectors and overseers and others to whom reference will be found *passim* in the Appendix.

Vital Statistics. The discrepancies and omissions which characterize the vital statistics now collected throughout Canada call urgently for remedy. For the Dominion, now engaged in building up its national unity, it is important that uniform data should render possible to statisticians the institution of true interprovincial and international comparisons. By effective co-operation of the provinces with the Dominion this object should be capable of attainment without sacrificing the liberty of each province to satisfy its own special statistical requirements. The statistics published by the provincial boards of health might also with advantage be brought under review from the wider standpoint.

In this connection the following statement from the report for 1910-11 of the Committee on Public Health of the Commission of Conservation, Canada, as published on page 7 of the Third Annual Report of the Commission, is of value as showing the practical bearing of statistics of this character:

“Correct and accurate vital statistics are the basis of modern sanitation; they are the gauge whereby we judge of the progress made against diseases of all kinds, and whereby we obtain information for further advancement. It is essential that there should be a more uniform and systematic recording of births, marriages and deaths in Canada than there is at present. There must be some system which, while leaving to the provinces the collecting of the information, will allow of early and regular returns being made to a Dominion Office, where they will be carefully collected and published from time to time.”

Emigration. In view of the important effect on population of the large immigration into Canada, the Commission consider that every effort should be made to develop the system of recording departures, of which up to the present no statistics have been published.

Annual Estimates of Population. A problem closely associated with the Census and the collection of vital statistics is that of annual post-censal estimates of population. To meet the necessity for estimating population during intercensal periods the Canadian Census Office has followed for twenty years past the system employed in England and certain other countries, namely, that of assuming that the population is increasing in geometrical progression at the same rate as during the preceding intercensal period, annual growth being worked out by logarithms. The criticism is made of this method that it is unsuited to communities in which the factor of migration is important. The Commonwealth of Australia, for example, has abandoned the method as unsuitable and has adopted a system of 'statistics of fluctuation' for which are obtained as complete a record as possible of births, deaths, arrivals and departures, allowance being made for unrecorded departures, etc.¹ Notwithstanding that immigration to Canada during the past ten years has been on a scale that is not commensurate with that of any previous period, the calculations of the Census have shown an error of only slightly over one per cent for the Dominion as a whole. In the case, however, of the individual provinces considerable errors have occurred.²

Municipal Statistics. Closely bound up with the question of vital statistics is that concerned with the statistics of urban and other communities. At present there are no arrangements for bringing these into relation with each other; but there would be obvious advantage in annual statistical comparisons between the larger cities and towns of Canada for the purpose of showing their respective populations, vital and health statistics, assessments, debenture debts, sinking funds and figures relating to public services of water, transportation, lighting, power, etc.

In addition, however, to this general point of view, there are special interests connected with finance, local credit and proper systems of municipal government, which render it imperative that adequate, comparable, municipal statistics should be annually published. In the Appendix (p. 33) will be found a statement of facts relating to this class of statistical information, and our recommendation is that the issue of municipal statistics upon uniform and comparable lines should be discussed in conference between authorities of the Dominion and Provincial Governments, with a view ultimately to the publication by the Dominion Census and Statistics Office of annual municipal statistics covering the whole of Canada.

PRODUCTION.

Under this heading fall statistics of agriculture, forestry, fisheries, mines and manufactures. To a greater or less extent in each of these branches the conditions are the same. Statistics of comprehensive scope are collected decennially through the census, and the results being compiled by the addition of actual units cannot be questioned upon the score of principle. But we are of opinion, and indeed we believe it to be generally admitted, that decennial statistics of production no longer meet the requirements of a rapidly-expanding country. That this is so is shown by the efforts already made on the part of different authorities to collect more frequent statistical information, in some cases of less and in other cases of wider scope than that of the

¹ See Bulletin No. 1, 1907, of the Commonwealth Bureau of Census and Statistics, pp. 15-23, where the problem is discussed at some length and the algebraic curve is indicated.

² Of the whole problem involved a valuable discussion will be found in a paper by E. C. Snow, M.A., on 'The Application of the Method of Multiple Correlation to the Estimation of Post-censal Populations,' Journal of the Royal Statistical Society of London, England, Vol. LXXIV, Pt. VI, May, 1911, pp. 575-629.

census. It is considered desirable to begin an annual census of production dealing in the first instance with leading lines, in the expectation that such collection of data may render unnecessary the present decennial census of production.

In addition to the work of the census, statistics of production are collected by different departments of the Dominion Government and by the provincial governments. An entire lack of co-ordination as between any of these authorities entails, besides much waste and duplication of effort, a constant conflict of statistical results. The reliability of these results is thus inevitably questioned both at home and abroad. Leading illustrations in support of these conclusions will be found in the Appendix.

Agriculture. In this, one of the most important branches of production, the evidence collected shows that statistical reform is urgently called for. While the decennial statistics of the census are comprehensive in scope and are collected upon principles statistically sound, the interval between the census years detracts from their value, and in a rapidly-growing country they become obsolete almost as soon as published. Moreover, the agricultural seasons in the census years may be of abnormal character, thus vitiating comparisons where otherwise possible.

But the agricultural statistics of Canada have to be considered not only in their relation to domestic and imperial interests, but also from an international view-point. Canada is one of fifty countries adhering to the International Agricultural Institute at Rome, and it is therefore desirable to conform as far as possible to the statistical requirements of the Institute. These include an annual ascertainment of the areas and yields of the principal field crops, the number of which is being gradually extended. For all practical purposes, therefore, we consider that trustworthy continuous annual statistics of agricultural production are essential. As shown in the section of the Appendix dealing with the organization of agricultural statistics in Canada, annual estimates of the production of the principal field crops and of the numbers of farm live stock have been issued by the Census and Statistics Office since 1908; similar estimates are also published annually by certain of the provincial Departments of Agriculture. These estimates are, however, hopelessly at variance with each other; they differ also from the figures of the census.

When we examine into the method employed for the estimation of crop areas and the number of farm animals we find that it generally consists in the application of estimated average percentage increases or decreases to the figures of the previous year. We believe that errors and discrepancies must necessarily arise from this method. We regard it as unreliable, because it is based largely upon conjecture and because errors tend annually to become cumulative.¹ There is, indeed, sufficient evidence to show that the use of this method, begun by the United States Department of Agriculture and copied in Canada, has led in both countries to serious overestimates of the production of the principal cereals. It is scarcely necessary to point out that the issue of conflicting statistics by Government authorities calls in question the reliability of both sets of figures and is detrimental to Canadian interests.

In view of this criticism the question may be asked, What remedy can be applied to the present situation? A complete answer depends, we think, upon the degree of co-operation possible between the Dominion and provincial Governments, and our recommendation therefore is that the question should in the first place form the subject of conference between the federal and provincial authorities. Action of this kind has frequently been suggested,² and actual co-operation in the collection of agricultural statistics between the Dominion and provincial governments has already been effected on more than one occasion. We consider that it would be possible to devise a general scheme under which every agricultural occupier should be required to make an annual return of the areas under the principal field crops on his farm and of the

¹ See page 40 of the Appendix.

² See Annual Reports of the Minister of Agriculture, 1883, p. xi, 1884, p. xii, 1897, p. 31, 1898, p. 30.

numbers of each description of his live stock. Where conditions render impracticable the collection of returns from individual occupiers the requisite data could, we think, be furnished by assessors or other officials of local authorities. The areas so returned would form the basis for an estimate of total production, obtained by multiplication of the areas by the average yields per acre as estimated by correspondents under some development of the present crop-reporting system.

The Dominion Government, and also several of the provincial governments, have organized services of monthly reports on field crops during growth, combined with pre-harvest forecasts of yield. The Dominion Government has in view the national needs of Canada and also the requirements of the International Agricultural Institute; the provincial governments engaged in this work serve only the local needs of their respective provinces. In both cases the services are enlisted of practical farmers who act as voluntary crop-reporting correspondents, there being thus in most of the provinces a double corps of correspondents, one reporting to the Dominion and the other to the provincial government. In our judgment this represents a needless duplication of effort. If this dual service could be replaced by one in joint operation by the Dominion and provincial governments, not only would waste of effort be avoided, but greater efficiency would be secured for the international, national and local ends in view.

With regard to such crops as fruit and tobacco, we consider that under existing conditions satisfactory annual statistics, as well as reports on condition during growth, can best be obtained by co-operation between a Central Statistical Office and the Fruit and Tobacco Divisions of the Department of Agriculture, the latter possessing the necessary technical knowledge and the former possessing the statistical data as to areas, as well as facilities for rapid compilation. We suggest that the extent and form of the co-operation necessary should be determined by consultation between officers of the respective Departments. For areas of fruit orchards there is not the same necessity for annual statistics as in the case of grain and other field crops. With an adequately equipped Statistical Office it would be possible to make special inquiries as to the areas under fruit trees every few years; but with a view to the avoidance of duplication and of conflicting figures, we consider that efforts should be made to carry out any such inquiries with the aid of the provincial governments of the fruit-growing provinces.

Having regard, therefore, to the whole statistical situation in regard to agriculture, we have agreed upon the following recommendations:

(1) That arrangements should be entered into by the Dominion and Provincial authorities to secure by co-operation—

- (a) The collection at a given date of annual statistics of areas under the principal field crops and the numbers of farm live stock.
- (b) The adoption throughout Canada of uniform methods for the classification, collection and compilation of agricultural statistical data.
- (c) That for special crops, such as fruit and tobacco, the co-operation should be obtained of the Fruit and Tobacco Divisions of the Department of Agriculture, both with regard to statistics and monthly crop reports.
- (2) That the collection from reliable sources of the market prices of agricultural produce be undertaken with a view to the regular publication of records of prices on a comparative basis.

With reference to these recommendations we would call special attention to the notes on pages 43 to 45 of the Appendix, entitled 'Statistical Conditions in the West of Canada.' These embody the results of personal visits which one of our number paid to various centres in the Northwest Provinces and in British Columbia between the dates of July 1 and August 21. It is gratifying to observe that in the course of these visits there was found everywhere a general readiness to co-operate with the Dominion Government in seeking to attain the national ends contemplated by any revision of statistical methods. We believe that the detailed suggestions, which are

indicated as arising out of the conferences and interviews held, may form a basis of discussion upon the occasion of the formal Conferences, which, we propose, should take place between the Dominion and Provincial authorities.

In any general scheme for the collection of annual agricultural statistics throughout Canada, the co-operation of the Department of Indian Affairs, whose Agents now collect statistics of the agricultural production of the Indian Reserves, should and could, we think, be obtained.

Forestry, Fisheries and Mines. The situation in each of these branches is substantially similar, viz., the existence of annual statistics of production, collected by the Interior, Fisheries and Mines Departments, and decennial statistics, collected by the Census and Statistics Office, with the further element that provincial statistics exist in varying degrees of completeness. The Census statistics, besides being recurrent at too long intervals, have the defect of lacking the expert point of view, while the Dominion departmental statistics are collected without statutory authority and consequently do not cover certain features with the fulness necessary from a comprehensive point of view. We recommend, therefore, as an immediate necessity, closer collaboration between the Census and Statistics Office and the Dominion and Provincial departments concerned, for the purpose of securing adequate annual statistics in each of these branches of production.

Manufactures. The Commission are of opinion that statistics collected at more frequent intervals than ten or even five years are desirable for the adequate measurement of industrial progress. In support of this opinion the authority may be cited of the late Carroll D. Wright, United States Commissioner of Labour, who wrote:

"Censuses taken at intervals of ten years are liable to be quite inadequate for comparison, for the reason that one decade may end when our industries are in a flourishing condition, while the next may terminate in a year of great depression. Statistics are relied upon as of great value in scientific and economic inquiries, but they may be very misleading and insufficient to present the true conditions when collected at long intervals."¹

Under arrangements described in the Appendix (p. 49) the Commonwealth of Massachusetts, U.S.A., collects annual statistics of the principal manufactures, whilst in Australia such statistics are issued for the Commonwealth by the Commonwealth Statistician in concert with the statistical departments of the federal States.

Having made inquiries into the arrangements of the Census and Statistics Office and especially into those of the postal census of manufactures of 1905, we believe that statistics of the principal manufacturing industries of Canada can be annually collected through the post at a moderate cost.² The work would require a staff whose permanent employment and training in this department would lead to increasing efficiency and eventually ensure the prompt issue of adequate and accurate figures. Believing that the results obtained would justify the expenditure required, we recommend that a scheme for the annual collection of statistics of manufactures be prepared and put into operation as part of the work of the proposed Statistical Office. In the preparation of such a scheme we think that care should be taken to guard against too much complexity in the information required. The schedule should be limited to details concerning which information is imperative and which would not prove irksome to the firms and individuals whose co-operation would be required.

It has been suggested that temporary local or travelling agents should be employed to secure due completion of the schedules, and such agents are actually employed in

¹ Twenty-second Annual Report of the Statistics of Manufactures for the year 1907, Commonwealth of Massachusetts, Boston, 1908, p. xvi.

² It was stated in evidence that the annual cost of such a scheme would not exceed \$11,000 to provide an office staff of persons whose duties would comprise the preparation, mailing and revision of schedules as well as the compilation of results.

Massachusetts as part of the 'missionary work' amongst the newer concerns (Appendix, p. 50); but the question of a similar arrangement in Canada,—especially as any such addition to the staff would entail extra cost,—should be deferred until experience proves its necessity.

The collection of adequate annual statistics of manufacturing industries on the part of the Dominion Government should render unnecessary any similar efforts by the provincial governments; and where, as in Ontario, arrangements already exist for the collection of provincial statistics of manufactures the question of the avoidance of duplicate efforts in this direction could be discussed and settled by conference between the Dominion and provincial authorities.

TRANSPORTATION.

Transportation statistics, though valuable in themselves, are, as already noted, of marked importance as reflecting trade. The observations which the Commission have to offer under this head are in fact as much from the trade point of view as from that of transportation pure and simple.

Canadian canal statistics, though collected by the same agency as railway statistics, are as regards the analysis of traffic on a different basis. In their present form it is impossible to compare or collate internal water-borne traffic with that of the railways. More recently there has been an attempt to reorganize these statistics, and the process has led to the elimination of certain information previously set forth. The Commission would advise that the completion of reorganization be deferred until the needs of the branch having the collection of internal trade statistics in hand may become fully known.

Canadian statistics of water-borne traffic are complete in the case of vessels arriving from and clearing for ports in foreign countries, the Customs noting such arrivals and departures and the statistics of exports and imports supplying an analysis of the cargoes. No such analysis, however, of the coasting trade of Canada is at present available.

The United States Interstate Commerce Commission unites under its jurisdiction the functions which in Canada are performed by the Board of Railway Commissioners and the Statistical Branch of the Department of Railways and Canals. The forms and general statistical methods of the Interstate Commission have, in fact, been followed by the Canadian Statistical Branch. The question arises whether a closer association of the Statistical Branch with the Railway Commission would not tend to the improvement in a practical way of Canadian railway statistics. For example, both the Commission and the Branch now publish statistics of railway accidents, but those of the former, reflecting as they do the inquisitorial powers of the Board, are especially valuable from the practical standpoint of suggesting remedies,—the chief purpose for which accident statistics are collected. The fact that it was the activities of a body to all intents the same in scope and function as the Railway Commission, which in the first instance planned and perfected the form and content of our railway statistics, may be allowed to suggest that these statistics be continued in as close touch as possible with the same class of administrative machinery.

TRADE AND COMMERCE.

It would be superfluous on the part of the Commission to point out the great importance to Canada—whose main economic problem is the development of an immense and varied source of natural wealth—of complete and accurate statistics of trade, external and internal, which is based upon the possession of that wealth.

Trade statistics have the characteristic that they are to a large extent derived from the records of other activities, such as tariff administration, transportation, etc. No field of research accordingly demands a wider purview of the whole range of sta-

tistics, or a greater grasp of detail. In none is the lack of co-ordination between the component parts of a statistical system more injurious or the result of such co-ordination more fruitful.

Foreign Trade. The primary statistics of the foreign trade of Canada are collected by the Customs Department and are issued in monthly and annual reports on the 'Trade and Navigation of Canada.' Based on these and designed to analyse and elucidate their contents from a trade point of view, monthly and annual reports are issued by the Department of Trade and Commerce. The latter reproduce to a certain extent in other forms the Customs reports, but include valuable information, especially of a comparative nature, not readily obtainable elsewhere. The situation as between the two departments, which this reproduction of matter indicates, is significant enough to warrant statement in some detail.

When, in 1887, Parliament provided for the creation of the Department of Trade and Commerce, the Customs and Inland Revenue Departments were placed under its control by proclamation dated December 3, 1892. Up to this time the Customs reports had been the only statistics of foreign trade issued by the Government. Shortly after the organization of the new Department, however, trade statistics of an interpretive character were inaugurated by that Department. Under this arrangement both the primary trade statistics of the Customs and the new interpretive statistics were the product of distinct staffs. Subsequent legislation (June 29, 1897) restored the Customs and Inland Revenue to the status of independent Departments, represented in each case by a Minister.

With regard to the broad distinction between these two classes of statistics, it may be pointed out that the Customs is primarily a revenue-collecting department. The performance of this duty has rendered it necessary for the Customs to obtain the statistics of imports and exports. The Customs import and export entries in fact yield the sole information we possess in detail as to the imports and exports of the country. Considerations of revenue accordingly have never been the sole end taken into account by the Customs in compiling its statistics. For example, free as well as dutiable goods are taken into account, navigation statistics are compiled and numerous departures made from the classification of the Tariff Act.

With regard to the two series of reports which have resulted, the Commission do not think that in this connection alone serious loss in the way of expenses of compilation and publication is incurred, as some repetition of matter would be difficult to avoid under any circumstances of organization.

Two separate departmental organizations are engaged in very similar tasks, namely, that of furnishing information to the public on matters of trade both in the form of general statistics, and in reply to specific inquiries addressed to the Government. For example, a merchant wishing to be informed as to either the internal or foreign trade of Canada in certain articles may apply for information to two or more departments and receive an independent reply in each case. It will be seen that with no organized co-operation between these branches the work must sometimes lie along parallel lines. We are not aware of any other country where trade information is supplied to the public by more than one department.

A special feature of the Canadian foreign trade reports to which the Commission desire to refer is the scheme of classification under which commodities are set forth. This from a purely trade standpoint is in some cases unsatisfactory. Thus the single heading 'electric apparatus' includes insulators, galvanic and electric batteries, and telegraph and telephone instruments,—all indistinguishable. The reason for this lies in the fact that the classification of goods is dictated primarily by the Customs Tariff Act, and although the list has been enlarged to cover 1,532 separate items in the case of imports,—a larger number than is shown in the statistics of any other country,—instead of the 711 items of the Tariff, it still leaves the trade in certain important articles unilluminated by statistics. For this the remedy would appear to be a revision of the

classification scheme with trade ends more prominently in view. The drawing up of such a scheme would be a work of considerable difficulty; it would be impossible to enlarge it beyond certain bounds, and at the same time the list would have to conform to the requirements of the Tariff Act. The work would demand not only expert knowledge of the main currents of trade and consumption in the Dominion, but of the exigencies of tariff administration and statistical treatment. The Commission suggest that it might be undertaken by an advisory Committee composed of representatives of the Customs, Finance and Trade and Commerce Departments, the Committee to endeavour to obtain the views of representative manufacturers, wholesalers and others whose interests are furthered by efficient trade statistics.

A defect in foreign trade statistics,—one which Canada shares with other countries,—may be referred to here, namely, the fact that they do not in all cases show the country of first origin in the case of goods imported, or of the country of final destination in the case of goods exported. In the case of imports the goods are credited to the country whence they begin their continuous journey consigned to the importer in Canada, this being all the importer is required to state on the bill of entry, which is the basis of the Trade and Navigation Import Returns. For example, many articles sent to Canada from the United Kingdom are credited to the United Kingdom when as a matter of fact they have their origin elsewhere. But by reason of the British preferential tariff and trade treaties with different foreign countries the origin of the goods certified as originating in these countries may be taken as correct. Similarly, in the case of exports, the goods are as a rule not traced beyond the country to which they are immediately consigned.

The British return of imports has frequently credited large shipments of Indian corn and raw cotton as from Canada, whereas Canada produces no cotton and little or no corn for export, the shipments in question being free goods originally imported from the United States. Early in the nineteenth century, at a time of keen competition between Great Britain and the United States for the carrying trade, a heavy trade from Canada to the West Indies was shown, whereas the trade was almost wholly in United States goods shipped to the maritime provinces for carriage in British bottoms.¹ At the present day grain from the Canadian Northwest to Great Britain goes forward in two forms: first, that which goes by Canadian routes and also that which is shipped on through bill of lading from Canadian points by way of United States ports and lands in Liverpool as Canadian grain; and, secondly, Canadian grain which is exported to the United States and goes into elevators there, whence it is either exported or not, according to the wishes of the United States buyer, going forward as American in the latter case. In the same way other Canadian goods sent into the United States, without their ultimate destination being known to the Canadian exporter, are credited to the United States in Canadian export returns, but in the United States returns may or may not appear as *in transitu* goods from Canada exported to Europe or elsewhere. The extent to which a system like this gives rise to contradictory and misleading statistics is further shown in two memoranda included in the Appendix (p. 55), illustrating certain discrepancies in the trade statistics of different countries.

The Commission are well aware that this is a problem of international rather than national scope. They are also aware of the difficulties involved in tracing origins and destinations when the cable and tramp steamer have revolutionized commercial methods. It is thought, however, that a well equipped intelligence office could do much to investigate particular cases where the magnitude of the interests involved would warrant such a course. A suggestion made to the Commission that statistics of exports should indicate the province of origin of Canadian goods is considered not to be practicable. This feature appeared at one time in the trade returns, but proved

¹ The Trade and Navigation Returns of Canada, as now compiled, show such shipments as foreign produce.

so misleading that the Government, after full consideration, decided to discontinue the practice.

We also recommend:

- (1) That returns should be made showing imports and exports by a larger number of principal ports.
- (2) With a view to the consolidation of the tables in these returns—
 - (a) That imports of dutiable goods be classified under the same general headings as free goods, viz., as 'Products of the Mine,' 'Products of the Forest,' etc.
 - (b) That Tables 14 and 22 of the Trade and Navigation Returns be dispensed with and that the totals carried therein be inserted in Tables 1 and 3, respectively.
 - (c) That the column of 'Total Imports' in the Trade and Navigation Returns be dispensed with, the column showing 'Imports for Home Consumption' being sufficient.

Interprovincial Trade. Of the internal trade of Canada, which in a country so extensive and possessing so many sharply differentiated interests is a subject calling urgently for illumination, few or no statistics at present exist apart from such as may be roughly compiled from certain records of production and transportation. Under this head one of the most obvious needs is statistics of interprovincial trade. To this phase of the subject the Commission have devoted much attention.

Trade statistics being, as already noted, derivative rather than primary, the lack of interprovincial returns arises in the absence of any machinery like that of the Customs to keep explicit record of the internal movement of goods. Clearly the creation *de novo* of such machinery for the sole purpose of observing domestic trade is out of the question. The problem is then to discover what are the possibilities of employing existing arrangements to provide information on this important matter.

The first agency which suggests itself is transportation statistics. An analysis of the bills-of-lading and way-bills of the railway and steamship companies would presumably show the movement of all commodities traded in between different points in Canada. It was suggested that in the case of goods shipped from one province to another shippers might be required to provide duplicate bills-of-lading with separate prices attached in the case of leading lines of goods and a valuation in one amount of remaining articles, such bills to be forwarded by the transportation companies to Ottawa for compilation. Two formidable difficulties, however, would have to be met in this connection. (1) The form of the bill-of-lading is based on the freight-rate schedule and does not call for a detailed classification of goods. Moreover it does not specify values, a feature which it would be difficult to add, inasmuch as shippers incline to regard any such statement as an attempt to influence freight rates, which are to a certain extent based on values. (2) The labour of such a record would be very great, the number of bills-of-lading running into millions.

It has been suggested in this connection that the problem might be simplified by dividing the Dominion into economic areas, presuming that the aim of the Government is to obtain a record of trade between those sections only of the country which are economically distinct. A general division of the Dominion from the economic standpoint is into East and West, according as the areas in question lie east and west of the headwaters of Lake Superior; but a more definitive classification takes count of four main groups: the first being the maritime provinces, the second being made up of the original provinces of the lower St. Lawrence basin, the third embracing the grain lands of the prairies, while the fourth, British Columbia, includes the cordillera or mountain section of the West and the Pacific slope. Each of these is set aside from the other by strongly marked natural barriers, across which trade passes by only a few lines. A single railway joins New Brunswick to Quebec, three lines of railway join Ontario to the prairies, and two lines the latter to British Columbia. There is, of course, additional interprovincial traffic *viâ* the United

States; but this is in bond and the record of it is already available. This is also the case with ocean-borne traffic between the maritime provinces and Quebec and from eastern points to British Columbia via Cape Horn or the Tehuantepec Railway.

Such a basis for internal trade statistics would undoubtedly eliminate a great deal of mere 'neighbourhood traffic,' and would greatly reduce the amount of data to be handled. It may also be pointed out that the estimates of the internal traffic of the United States, compiled by the Interstate Commerce Commission of that country for the purpose of controlling railway rates, does not proceed upon an interstate basis, but on a division of the country into ten units the boundaries of which are much less clearly marked than in the case of the divisions indicated above for Canada.

Nevertheless even with this modification the difficulties would appear very great. The sharpness of the divisions above pointed out might suggest for a moment that the method of inspection of traffic could be applied seeing that only three series of inspections would be required to show the trade between the four proposed economic sections, namely: an inspection on the lines of the Intercolonial Railway; inspections on the Canadian Pacific Railway, the Grand Trunk Pacific Railway and the Canadian Northern Railway lines out of Fort William and Port Arthur; and inspections on the Canadian Pacific Railway lines across the Rocky Mountains. To the plan of inspection, however, the objection that an examination of the contents of cars would unduly delay traffic would seem insuperable. The further suggestion that if transportation statistics were to be the vehicle employed the adoption of a basis of this kind would greatly reduce the number of bills-of-lading, etc., to be examined, would still leave open the difficulties of classification and valuation above pointed out.

Accordingly, after careful investigation and conference with a large number of manufacturers, traders and leading transportation companies, the conclusion has been reached that a complete and accurate statement of interprovincial trade, both in manufactured and foreign products, is not possible without duplication of values and within reasonable limits of cost. The shipment of goods to a distributing point in one province, whence they are sent in part to other provinces, the extraordinary amount of detail involved in an attempt to trace express goods, and the mail-order business of the country, raise in an aggravated form the problem of 'destination,' which has always perplexed statisticians.

It is thought however that much valuable information as to the internal trade movement of goods in Canada could be obtained by selecting a list of the more important articles of interprovincial trade and obtaining statistics as to their movement from producers, transportation companies, and such other authorities as might be able to furnish them. In the case of such articles, representatives of the Government should both initiate and supervise the collection of the necessary information in such manner as a first-hand investigation of the production and transportation of these several articles might indicate. The experience gained in dealing with these lines would, it is hoped, open the way to a comprehensive enlargement of the schedule. A very moderate staff and outlay would be sufficient to make the experiment. How far and in what detail the system might be expanded would depend upon the value of the information obtained, the practical difficulties met and the expense incurred.

Stocks of Grain. Percentage estimates of the quantities of grain in farmers' hands, obtained from agricultural correspondents, are published annually at the end of March in the Census and Statistics Monthly, issued by the Census and Statistics Office, and statistics as to the quantities of grain stored in Canadian elevators and warehouses are published from time to time in the Weekly Report of the Department of Trade and Commerce. But from the resolutions on commercial statistics passed by the International Agricultural Institute it is apparent that more than this will soon be required from the governments of the adhering countries.¹ The stocks of grain, whether visible

¹ Report of the General Assembly of the International Agricultural Institute, 3rd Session, Rome, May, 1911, pp. 320 and 321.

or invisible, in first or second hands, afloat or on rail, etc.,—the estimates of which have hitherto been left principally to the technical journals of the grain and flour trades,—will therefore in the near future call for special official statistical investigation.

Tariff Statistics. Akin to the statistics of trade, though they may primarily involve production, are statistics designed to show the bearing of the tariff on industrial and economic conditions and thus to be of direct value in revising the tariff. No general scheme can be relied upon to furnish the many details which must necessarily be considered by the Government in carrying out such work. The action of Germany and the United States in this connection may be quoted as having had the effect of placing a valuable body of information before the public and thus of materially assisting popular and Parliamentary judgment on this important question.

General Organization. In view of the foregoing, it may be of interest to note that a Committee appointed by the United States Secretary of Commerce and Labour, in 1908, to inquire into the statistical work and organization of that Department with regard to trade recommend that the Department should be organized in four main divisions as follows: (1) the Division of Foreign Commerce; (2) the Division of Domestic Commerce; (3) the Division of Consular Reports; and (4) the Division of Tariffs. Such an outline, whether it conform to our own departmental organization or not, seems to offer a basis for the presentation of trade statistics.

MISCELLANEOUS ECONOMIC STATISTICS.

The chief agency for the collecting of general economic statistics,—more particularly statistics illustrating the relations of capital and labour,—is the Department of Labour, whose work, as described in the Appendix, covers a considerable range of subject-matter. Reference is made to the following features on account of the general situation which they illustrate.

Wages. No comprehensive periodical reports on wages are as yet available, and the want of them is distinctly felt. Mention should be made in this connection of the advantage the Department would derive were it able to avail itself of the assistance of certain other Departments engaged in collecting statistics of production, who are not interested in wages statistics from the same point of view, but who could, by a slight extension of their schedules, obtain information that would be valuable to the Department. In a subject which is so essentially one of detail, collaboration of this kind is especially called for. An index number of the wages movement in Canada would be a particularly valuable addition to our statistics.¹

Household Expenditure. Canada has at present no statistics of family consumption or standards of living,—a serious lack in view of the varying climatic and other conditions which prevail in the different sections of Canada,—conditions at Victoria, in British Columbia, for example, resembling those of the south of England, whereas at Winnipeg, in Manitoba, they approximate to those of Moscow. A series of studies in standards of living in leading countries and typical districts of Canada similar to that which has been made by the Labour Department of the British Board of Trade into conditions in the United Kingdom, France, Belgium, Germany and the United States, would serve a practical purpose at the present time, when population is fluid and when comparisons of such nature are in frequent demand not only in the settlement of wages schedules but for general information. Such statistics are also of value from the standpoint of trade.

¹ The Department of Labour has in preparation statistics bearing upon this subject.

Industrial Accidents. One field of research in which the Department has endeavoured to co-ordinate statistics from various sources offers an extreme instance of the lack of co-operation which at present exists in statistical work in Canada and the difficulties which are met when it is sought to bring about unification. Probably over a score of Departments, Dominion and Provincial, are engaged in the collecting of statistics of industrial accidents incidental to the administration of mines acts, factories acts, shops acts, etc. In the attempt to create a record of industrial accidents in all occupations for the whole Dominion, the Department has had to create new sources of information and has been hampered by the lack of co-operation, mainly provincial. Statistics on a subject like accidents gain so much from breadth of outlook and careful methods in classifying details that the present conditions cannot be regarded as satisfactory.

Prices. Brief reference has already been made to the need of authoritative records of the prices of agricultural produce; but there remains the general question of the prices of all commercial commodities. Records of such prices are required for many different purposes, and we consider that as a general principle they should be collected systematically and prepared for publication by statistical experts rather than by several different Departments of the Government to suit special requirements. Careful records of prices thus compiled should possess unimpeachable statistical value, and they would be available for general use in respect of the numerous purposes to which they are capable of application.

EDUCATION.

We are of opinion that in any statistical reorganization room should be found for compilation into Dominion totals of the provincial education statistics, accompanied by such explanations as may be necessary to elucidate the figures.

Statistics as to education are necessarily to be derived from the educational authorities of the various provinces. But, as in the case of other statistics of a provincial nature, it is highly desirable that for purposes of comparative study and general information statistics of education should be compiled for the whole Dominion. Such statistics should comprise the nature and variety of educational institutions, public and private, including their organization, grading and equipment: whether for primary, secondary or higher education. They should give also the numbers of pupils and students in the various grades, their attendance, age on entering and leaving school, the nature of the education given, whether theoretical, practical or special, and any supplementary educational facilities, including libraries, night schools, art or trade schools, etc. Particulars should be included as to the teaching staffs, their qualifications, sex, age, frequency of changes in the staffs; also the expenditure on education in the various grades, distinguishing permanent and annual expenditure.

Should it be deemed advisable at any time to give still more national scope to the education statistics of Canada by special inquiries, we consider that such inquiries could best be carried out by the Dominion statistical authorities acting in concert with each of the Provincial Departments of Education.

MISCELLANEOUS.

We direct attention to the notes in the Appendix on statistics of insurance, loan and trust societies, justice and other departments of administration not specifically dealt with here, as it is considered that in each of these cases the statement of the conditions now existing carries its own suggestion.

PUBLICATIONS.

We consider that the scope of the Canada Year Book should be altered and enlarged. Briefly, it should be an annual summary of the whole range of statistical information contemplated in the frontispiece to this Report. It should also include short descriptions relating to the history, local government, fauna, flora and natural resources generally of Canada. The 'Statistical Record of Canada,' which at present forms part of the Monthly Report of the Department of Trade and Commerce, should, we think, be harmonised with the similar tables given in the Year Book. This would avoid confusion, since in certain cases similar tables in each publication do not agree with each other owing to the adoption of different methods of calculation. We think that the annual repetition in the Year Book in so many tables of the figures from the date of Confederation is unnecessary, and we suggest that by their limitation to the comparative figures of, say, five years room would be available for information of more immediate value.

The issue of similar monthly agricultural publications by the Census and Statistics Office and the Publications Branch of the Department of Agriculture is an instance of the duplication of statistical material, which was especially noticeable when both branches were part of the Department of Agriculture and which is still unnecessary as between two Departments of the Dominion Government. The issue by different Departments of the Government of independent statistics of the same character necessarily entails confusion and waste of effort, and we suggest therefore that an understanding should be arrived at between the two Departments concerned for the better delimitation of their respective functions and for the prevention of similar overlapping in future.

A monthly publication to include the latest comparative figures of all the principal Canadian statistics, presented in convenient tabular form, is very desirable.

SUMMARY OF RECOMMENDATIONS.

Briefly re-stated, the Recommendations of the Commission are as follows:

I. The organization of a Central Statistical Office for the co-ordination, unification, extension and general improvement of statistics, involving,—

- (1) The creation of a Dominion Inter-departmental Statistical Committee.
- (2) The creation of an Interprovincial Conference on Statistics.

II. The following reforms in existing statistics:

(1) Dominion.

(a) *The Census.*—The taking of a quinquennial Census and the limitation of the field of the Census proper to the enumeration of population and property, with a thorough re-examination of the methods at present in use in collecting and compiling data and in publishing results.

(b) *Production.*—The institution of an annual census of production, embracing the chief products of agriculture, forestry, fisheries, mining and manufactures.

(c) *Trade.*—The co-ordination of the work of the statistical branches of the Departments of Customs and Trade and Commerce, with improvement in the classification scheme and in other details.

(d) *Transportation*.—The reorganization of canal statistics. The creation of statistics of coastal trade.

(e) *Labour*.—The creation of wages and consumption statistics.

(f) *Emigration*.—The perfecting of methods of recording departures.

(g) *Miscellaneous*.—Improvements in statistics of Insurance and the development of price statistics.

(h) *Publications*.—The enlargement of the Canada Year Book. The co-ordination of other publications.

(2) Provincial.

The co-ordination of statistics on the following subjects in the light of matter set forth in the Report: births, marriages and deaths; public health; education; agriculture; local and municipal governments; industrial accidents; various phases of production; finance; public lands; public works; and hospitals and charities.

III. The appointment of all officials engaged in statistical work on grounds of character and capacity.

We have the honour to be,

SIR,

Your obedient servants,

R. GRIGG,

Chairman.

ADAM SHORTT.

ERNEST H. GODFREY.

W. A. WARNE.

R. H. COATS.

J. R. K. BRISTOL,

C. H. PAYNE,
Secretary.

OTTAWA,
November 30th, 1912.

APPENDIX.

STATISTICS OF POPULATION.

Statistics of population may be divided into three groups, viz., (1) Statistics of Enumeration; (2) Vital Statistics; and (3) Statistics of Migration.

Statistics of Enumeration. The Canadian Census is taken decennially in the same year as that of the United Kingdom and of other countries within the British Empire. In a country like Canada, with immense areas sparsely settled, the task of the Census is one of exceptional difficulty. The Census of 1911 was the fifth since Confederation in 1867. The Census of 1871 did not include Prince Edward Island nor British Columbia, as those provinces entered the Dominion after the Census of that year. The Census of Canada is not taken primarily for general statistical purposes; its returns in respect of population form the basis of Parliamentary representation and also in part of the payment of the provincial subsidies.

From its commencement the Canadian Census has included not only enumeration of the people but also particulars respecting education, manufactures and natural products; and therefore, in view of the importance of the Census Office as the chief statistical Bureau of the Dominion, reference may here be made to the entire range of its activities.

The Canadian Census. Under the Census and Statistics Act, 1905 (4 and 5, Edward VII., c. 5), provision was made for the establishment of the present permanent Census and Statistics Office as a branch of the Department of Agriculture, with the duties of taking a complete decennial Census of the whole of Canada, commencing with 1911, and a Census of population and agriculture only, for the three Northwest provinces of Manitoba, Saskatchewan and Alberta, commencing with 1906, being the mid-year of each decade, and of prosecuting such special intercensal inquiries as may be ordered from time to time by the Minister of Agriculture.

For the general decennial census the details required to be collected embrace the following:

- (1) The population and the classification thereof as regards name, age, sex, colour, social condition, nationality, race, education, religion, occupation, and otherwise, together with a record of all persons deceased within the census year;
- (2) the houses of habitation, stores, warehouses, factories and other buildings therein, and their classification as occupied or vacant, under construction or otherwise;
- (3) the occupied land therein and its value, and the condition thereof as improved for cultivation, in fallow, in forest, unbroken prairie, marsh or waste land and otherwise;
- (4) the products of factories, farms, fisheries, forests and mines therein, and other industries, with the values of all the said products and of plant and real estate employed in the said industries, within the census year;
- (5) the wage-earnings of the people thereof within the census year;
- (6) the municipal, educational, charitable, penal and other institutions thereof; and
- (7) whatsoever other matters are specified in the forms and instructions to be issued, as the Act provides.

For the purpose of the Census the country is divided by proclamation of the Governor in Council into census districts corresponding as nearly as may be with the electoral divisions and subdivisions for the time being. Commissioners are appointed for each district, and these act under the direction of the chief officers

from headquarters at Ottawa; the enumerators are appointed under authority of the Minister of Agriculture and deliver their completed schedules to the commissioners, whose duty it is, after examination and scrutiny of the returns with a view to correction of any errors that may appear therein, to transmit them to the Census and Statistics Office at Ottawa.

For the taking of the Census of 1911 thirteen schedules were employed as follows: 1. Population; 2. Mortality, Disability and Compensation; 3. For Heads of Families. Houses and Buildings, Fruits, etc.; 4. Agriculture. Grain and other Field Crops for the harvest year 1910; 5. Agriculture. Hoed Crops, Tobacco, Hops and Grass Seeds in 1910; and Field Crop Areas in 1911; 6. Agriculture. Animals and Animal Products; 7. Farm and Urban Values; 8. Forest Products in 1910; 9. Manufactures, Ship and Boat Building and House Building; 10. Churches, Schools, Colleges and other Institutions in 1911; 11. Fisheries; 12. Butter and Cheese Factories, etc.; 13. Mining and Mineral Products.

The date for the taking of the Census of 1911 was June 1. Previously to 1911 the date was April 1 in general conformity with British practice.

The Census is taken on the *de jure* system, which is generally understood as meaning that persons are counted on the given date as in their usual place of abode, whether actually present therein on that date or temporarily absent.

The time for the taking of the Census of 1911 being the month of June there is a likelihood that a number of families in cities and towns may have left their fixed or permanent homes to live temporarily at summer resorts at the seaside or elsewhere. The instructions require enumerators to record all such persons at their home or usual place of abode, and in every case where members of a family or household are temporarily absent their names and records are to be entered on the schedules, the facts concerning them to be obtained from their families, relatives or acquaintances, or other persons who can give the information. It may happen however that every member of a family is absent from the fixed home when the enumerator calls, and no one—relative or acquaintance or other person—can give the information concerning them which the Census requires. Special cards and instructions are provided to meet such cases. An Absentee Family Card for closed houses or dwellings is supplied to enumerators on which entries are to be made reporting the name of the head of the absent family, the number of persons in the family, and where the family temporarily resides, if known, and such cards, when filled, are required to be mailed promptly to the Census Office. A second Absentee Family Card for temporary homes or lodgings is also provided. On this card is reported the name of the head of the family occupying a temporary home or lodging in the enumerator's territory, the number of persons in the family and the place of his fixed home. The enumerator takes a full record of such family on the Census schedules and the information is transferred in the Census Office to the schedules of the territory in which the fixed home is located, to be counted with all the other records for that territory. The 'temporary home' card and the 'closed house' card are used to check each other with a view to obtaining by this plan a full report and record of every absentee family for the fixed home where it of right belongs.

Recommendations of the International Statistical Institute. The International Statistical Institute recommends that the following questions should be put by the Census to each individual¹:

- (a) Family and Christian names;
- (b) Sex;
- (c) Age by indicating if possible the year and the month of birth; otherwise by indicating the number of completed years and, in the case of children under one year, the number of months;

¹ Texte des Vœux émis par l'Institut International de Statistique dans les treize premières sessions, p. 8, La Haye, 1911.

- (d) The relation to the head of the family or household (degree of relationship or position in the household);
- (e) Conjugal condition (unmarried, married, divorced or widowed);
- (f) Profession or occupation (principal occupation, also indicating secondary occupations). Indicate whether the individual is employer, helper, or workman; as to persons living in a family without having a separate occupation, mention the occupation of the head of the family;
- (g) Religion;
- (h) Language spoken, or maternal tongue;
- (i) Knowledge of reading and writing;
- (j) Place of birth and political nationality. Indicate if possible the commune or at least the largest territorial division into which the birth-place of the person in question is situated (county, township, government, department, Regierungsbezirk, etc.). As to foreigners indicate the State whence they come;
- (k) Ordinary place of residence and nature or length of the stay in the place where the Census is being taken;
- (l) Blindness, deafness and dumbness, idiocy, lunacy.

Schedule No. 1 of the Canadian Census includes the above and in addition requires information as to insurance, year of immigration and naturalization and employment and earnings of wage-earners. On the other hand, recommendations of the Institute as to details to be collected and analysed under the headings of infirmities, religion, conjugal condition, etc., call for returns which are in several respects different from those collected by the Canadian Census.

Census Methods in Other Countries. It may be of interest to point out briefly in connection with the foregoing certain salient features of the census methods of other countries, which will serve to indicate the points in which they differ from those of Canada.

United Kingdom. In Great Britain a decennial census has been taken since 1801, and it is now under the direction of the Registrar General. The District Superintendent Registrars and the Subdistrict Registrars of Births and Deaths are the controlling census agents in England and Wales. The general census is limited to an enumeration of the people for which a single schedule is employed. The enumerators consist of overseers and assistant overseers of the poor, relieving officers for poor law unions and collectors of the poor rate. The schedule is required to be filled up by the head of the family. The census is *de facto*. Ireland is the subject of a separate measure, the enumerators being chosen from the officers of the Dublin Police and Royal Irish Constabulary, who are required themselves to fill out the schedules. A separate census of production was authorized by legislation in 1906. The first census of the kind was taken in 1908. Annual statistics of agriculture and fisheries are collected under other arrangements.

United States. A decennial census of population, agriculture, manufactures, mines and quarries was authorized to be taken in 1910 and every ten years thereafter, while a census of agriculture and live stock is to be taken in 1915 and every ten years thereafter. The census of 1910 was taken as for April 15. A supervisor is appointed for each State, the supervisors directing the enumerators. Special agents are employed for the censuses of manufactures, mines and quarries. A permanent Census Office was created in 1902. A special schedule applies to the Indian population.

Australia. The Australian census is carried out by the Commonwealth Statistician, with the aid of a State supervisor for each State, who is the Chief Statistician for the State. The country is divided into about 350 districts, each under the charge of an 'enumerator', who divides his district into 'collection' districts under the

charge of 'collectors' of whom there are about 6,000 in all. Two cards are used instead of schedules, one a 'personal', the other a 'householder's card'. The last census was taken as for April 3, 1911.

France. The census is quinquennial, and consists simply of an enumeration of the people. The last census was taken as for March 5, 1911. It is taken by means of individual schedules, each rural commune being divided into census districts of about one hundred inhabitants. Each district is in charge of an enumerator (male or female). In the towns each district may consist of as many as 200 inhabitants. The enumerator's first duty is to furnish a preliminary memorandum as to the number of schedules to be distributed; the latter are filled in by the individuals, controllers, supervisors and enumerators. Altogether, there are twelve forms used in connection with the census. The census is taken both *de jure* and *de facto*: *de jure* to comply with the requirements of military law and *de facto* for statistical purposes. Theoretically the totals by both methods should agree; in practice they differ mainly through the difficulty of enumerating French subjects in foreign countries.

Belgium. The Belgium population census is decennial, and the last census was taken on December 31, 1910. The country is divided into nine provinces, and the governor of each province exercises general control over the census arrangements, though their detailed execution is entrusted in each commune to the communal administration. Each commune has one or more enumerators who are required to make at least two rounds of visits to the houses in their districts: one for distributing the schedules and making a preliminary investigation, and the second for the verification and collection of the schedules. Three schedules are used. As a general rule the schedules are filled up by the head of each household. A household is defined as any number of persons living in common and the head as the person holding the chief authority. Provision is made both for a *de jure* and *de facto* classification of the population.

Germany. A quinquennial census of the population is taken on two cards: one for individuals and the other for households. The government of each country within the Empire conducts the census according to general principles modified by local circumstances, the Imperial Statistical Bureau at Berlin issuing schedules and tables which serve as models for the guidance of the local governments. In general the census is taken under the direction of district officers, who are permanent officials with duties somewhat similar to those of town clerks, sheriffs, or Reeves. The last population census was taken on the *de facto* system, the count being limited to those actually present in each dwelling on the night of November 30-December 1, 1910, night dwellers being counted at the residence at which they first arrived the next morning. Other censuses relating to agriculture, industries, etc., also take place quinquennially.

Austria. The census has been decennial since 1880. The last was taken on December 31, 1910, and included not only an enumeration of the people but also a detailed classification of agricultural and domestic live stock in the possession of each householder. Upon house owners (or their representatives) devolve the duties of filling up the census schedules for their own families and of distributing the census schedules and instructions to their tenants and householders. Each householder is required to fill up the census schedule and to sign it as correct. The names and addresses of house and property owners are registered with the authorities who arrange for the delivery to them of the census schedules. In effect therefore the property owners or their agents act to some extent as census enumerators.

The Census and General Statistics. For purposes of reference it will be useful to quote the text of Sections 19 to 24, Census and Statistics Act, R.S. 1906, c. 68, which define the powers of the Census and Statistics Office in relation to 'General Statistics':—

PART III.

GENERAL STATISTICS.

19. Subject to the approval of the Governor in Council, and under direction of the Minister, the Office shall collect, abstract and tabulate agricultural, commercial, criminal, educational, manufacturing, vital and other statistics and information from time to time in the intercensal years of each decade, in such ways and manners as are found most practicable. General Statistics.

2. So often as it seems to the Minister that the statistics and information collected and compiled are of sufficient value and authenticity to render their publication advantageous, he shall cause them to be published in such form and mode as the Governor in Council prescribes. Publication.

3. The Governor in Council shall not, nor shall the Minister, in the execution of the powers conferred by this section, discriminate between individuals or companies to the prejudice of any such individual or company. No discrimination. 4-5 E. VII, c. 5, s. 15.

20. Whenever in any province or territory any system is established or any plan exists for collecting agricultural, commercial, criminal, educational, manufacturing, vital or other statistics, the Minister may, under authority of the Governor in Council, arrange with the lieutenant governor in council of such province or territory, or with the organization possessed of such system or plan, for the collection and transmission of such information as is required by schedules prepared by the Office under direction of the Minister and approved by the Governor in Council for the procuring of such statistics. Provincial systems. 4-5 E. VII., c. 5, s. 16.

21. The Minister may, in collecting statistics in the manner provided by this Part, call upon any and all public officers to furnish to him copies of papers and documents and such information as lie respectively in the power of such officers to furnish with or without compensation for so doing, as is regulated from time to time by the Governor in Council. Public officers. 4-5 E. VII., c. 5, s. 17.

22. The Minister may direct the Office to abstract and tabulate in a concise form such information on various subjects susceptible of being represented by figures as is contained in departmental or other public reports and documents. Abstracts. 4-5 E. VII., c. 5, s. 18.

23. The Governor in Council may authorize the Minister to cause special statistical investigations, as regards subjects, localities or otherwise, to be made by the Office in the manner and by the means prescribed in such authorization of the Governor in Council. Special investigations. 4-5 E. VII., c. 5, s. 19.

24. The Minister shall cause all statistical information obtained in the Office under the provisions of this Part to be examined, and any omissions, defects or inaccuracies discovered therein shall be supplemented and corrected as far as practicable. Omissions and errors. 4-5 E. VII., c. 5, s. 20.

Vital Statistics. Hitherto Canada has been dependent entirely upon the records of the decennial census for the establishment of mean rates of birth, marriage and death applicable to the whole of the Dominion. Such rates apply only to the year of the census. From the census records similar rates are obtainable for each of the provinces, and these show considerable differences as between one census year and another. The collection of annual vital statistics has hitherto been left to the provinces, and at the present time such statistics are collected and published by each of the provinces, New Brunswick only excepted. Vital statistics for Nova Scotia have only been published for two years under the Registration of Births and Deaths Acts of 1908 and 1909.

As between those provinces which do publish vital statistics there are wide differences in scope and methods, and from the data at present available there is no possibility of calculating mean annual birth, marriage and death rates that could be recognized as statistically satisfactory or that would meet actuarial requirements.¹

The statistical year is not uniform for all the provinces. In Prince Edward Island the year ends on August 31 and in Nova Scotia on September 30; in the other provinces the calendar year is chosen. The Bertillon or international classification of the causes of death is wholly or partially adopted by some of the provinces (Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia,) but not by Prince Edward Island. Each province adopts, a separate scheme for the collection, compilation and presentation of its statistics, and consequently any comparisons between one province and another are at present valueless.

Statistics of various kinds are published by the Provincial Boards of Health.

In Great Britain both the decennial census and the annual vital statistics are under the direction of the Registrar General, and the general mortality tables based thereon are rightly regarded as scientific and authoritative for the purposes of actuarial calculations and sociological investigation. In Australia vital statistics are under local control as in Canada; but owing to the establishment of an effective co-ordination the Commonwealth Statistician is enabled to issue vital statistics for the whole of Australia.²

Migration. Canadian statistics of immigration are derivable from the reports of the decennial census and of the Immigration Branch of the Department of the Interior. They are important as indicating the increase in population and as revealing the origin and racial characteristics of immigrants with their destination by provinces. Statistics of the immigrant population are given in Vol. I of the Census of 1901 and in the Report of the Northwest Census of 1906. The data on this subject collected at the census of 1911 have not yet been published.

Of persons arriving in Canada at the ocean ports records are made and statistics compiled by the Immigration Branch of the Department of the Interior. In the case of saloon passengers, only nationality and sex are given, the division moreover showing what number are destined for Canada and what number intend to proceed to the United States. In the case of second- and third-class passengers, a division is made in the tabulation of statistics showing the number finally destined for the Dominion and those proceeding to the United States. With regard to those intend-

¹ This is not a new question. On January 31 and February 1, 1893, a Conference between provincial and federal public health authorities re cholera and vital statistics met at Ottawa by invitation of the then Minister of Agriculture (the Hon. A. R. Angers), the specific subjects for consideration being (a) the relations between Dominion and provincial sanitation and (b) the question of devising a method for collecting and publishing health statistics to be common to the Dominion and the provinces. On February 1, 1893, it was resolved, on the motion of Dr. P. H. Bryce, seconded by Dr. O'Donnell: "That in the opinion of this Conference it is desirable that the federal and provincial authorities co-operate in the work of collecting, compiling and publishing the vital statistics for the Dominion." See Eleventh Annual Report of the Ontario Provincial Board of Health, 1892, pp. 65-69.

² An interesting note indicating the defective state of Vital Statistics in Canada was published with the Mortality Returns of the Census of 1901 (See Fourth Census of Canada, 1901, Miscellaneous Statistics, Vol. iv, p. 228).

ing to remain in Canada the statistics show nationality, occupation and destination. Certain information is also secured as to the amount of money in the possession of each arrival; but such information cannot be regarded as reliable, because the new arrivals do not as a rule give the full amount in their possession, but merely state that they have over the required \$25 or \$50 as the case may be. Information is taken as to the religion of the arrivals, but this up to the present time has not been compiled.

Immigration statistics of those entering from the United States are secured by officers who examine the trains at all points where immigrants enter. They secure information as to name, age, birthplace, amount of money in possession and final destination.

Generally speaking, it may be said that both the classes of statistics above referred to are fairly accurate. They cannot however be accepted as showing the net increase by immigration in the population of the Dominion, because there is a considerable number of departures.

Until very recently no effort whatever was made to keep a record of outgoing passengers, either those travelling by rail to the United States, or those travelling by ocean ports to other countries. A short time ago the Immigration Branch began to secure manifests of all passengers on outgoing vessels, which were supposed to show those who intended to return, those who intended to settle in other countries and those who were departing merely after a visit to the Dominion. As these manifests must necessarily be prepared after the departure of the vessels the Canadian Immigration officials had no chance of ascertaining their accuracy. The manifests were delivered upon the next inward-bound trip and generally speaking the information obtained could not be considered reliable. Investigation of a number of cases showed that parties given on the manifest as intending to reside in England had already returned to Canada.

No effort has been made to collect statistics of persons going to the United States, and with the immense traffic between the two countries it is considered by the Department almost impossible to do so. The United States Government, for the purpose of their immigration figures and for keeping supervision over the class of persons entering their country, question every passenger entering. The information so secured is tabulated and published as immigration from Canada; but it is not considered by Canadian officials as reliable, because an investigation into one month's reported departures showed a number already returned to Canada who, when personally and individually interviewed, stated they had gone to the Republic merely for a visit.

There are in existence provincial Bureaux of Immigration, and these publish their own statistics.

Municipal Statistics. At present there are no arrangements for bringing under general review the accounts and statistics of the municipalities of Canada. Municipal statistics are published by Ontario and by Quebec, and the province of Manitoba has recently adopted a 'Uniform Municipal Accounting and Auditing Act.' For the past four years the Union of Canadian Municipalities has devoted special attention to the question of a national system of municipal statistics, and at its recent annual conventions, the latest of which was held at Windsor, Ontario, on August 27 to 29, 1912, it has passed resolutions urging the necessity for uniform municipal accounting by the various classes of municipalities of the Dominion. The Union has also prepared a scheme for the classification of municipal accounts under the following divisions: I. General Classification of Services; II. Cash Balances; III. Obligations contracted during the year; IV. Liabilities showing increase or decrease during the year; V. Liabilities at close of year; VI. Licenses and Fees; VII. Statement of Assets and Liabilities; and VIII. General Statistics.¹

¹ See the Canadian Municipal Journal, October, 1911, pp. 400-403.
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Correspondence relating to this scheme has from time to time passed between the Union and the Census and Statistics Office; and on June 7, 1909, a letter addressed to the Union by the Chief of the Census Office was in part as follows:

Two things are of great importance to the public who provide the moneys required for municipal service, viz.—

1. That records of receipts and payments of moneys contributed for municipal service should be kept according to a uniform and clearly-arranged classification and reported at the end of each fiscal year to the officer or department of each province having the overcharge of municipal affairs.

2. That all such records should be prepared in tabular statements for publication in a way to allow of comparisons being made of details for each class of municipalities, as Township, Village, Town, City, County, etc.

3. Each province of the Dominion should publish a Statistical Report for its own municipalities. But it is advisable also that a report should be prepared for all the provinces of the Dominion, and I would suggest that in providing the necessary legislation to carry on the work in each province the municipal officials should be required to make their statistical reports in duplicate and to furnish copies to the Provincial and Dominion offices respectively.

In other countries municipal statistics are collected and published in comparable form. The United States Labour Bureau compiles an annual abstract of statistics of cities having a population of over 30,000. In England the Local Government Board exercises control over municipalities and issues detailed analyses of their financial returns. In Germany, France and Italy the large towns have special statistical departments, and the statistics of the various towns are brought together and compared in Year Books or other publications.

PRODUCTION.

Agriculture. Prior to 1908 the only agricultural statistics for the whole of Canada were those collected by the decennial censuses of 1871, 1881, 1891 and 1901. Areas of field crops were not taken at all in 1871 and 1881, but only total yields. In 1891 areas of field crops were restricted to wheat, barley, oats, potatoes, field roots and hay and forage. Only in 1901 and 1911 were both areas and total yields taken of all the principal field crops.

Census Statistics. The Canadian Census, as at present organized, includes not only an enumeration of the people upon which legal parliamentary representation is based, but also an account of the natural products and economic resources of the Dominion. The agricultural particulars collected embrace the number and size of farms, the areas, yields and values of field crops, the numbers and values of live stock, including poultry and bees, the quantities and value of dairy products, the value and rent of lands, buildings, agricultural machinery, labour and wages, and information as to minor or bye products, such as wool, eggs, honey, wax and maple sugar. In the enumeration of live stock, horses and dairy cattle in towns do not escape compilation.

Under the Census and Statistics Act of 1905, provision was made for a quinquennial census of population and agriculture only, for the three Northwest provinces, and the first Northwest Census under this Act was taken in 1906. The results were published in a Special Report, with an explanatory introduction.

In 1907 an agricultural postal census of Ontario, Quebec and the Maritime Provinces was taken. The particulars collected embraced farm lands, field crops and live stock, and the results were published by provinces and counties, with comparative figures of the Census of 1901 in respect of provinces, as Bulletin V of the Census and Statistics Office. For the province of Ontario this census was taken in

co-operation with the Bureau of Industries of the Ontario Department of Agriculture. The Census and Statistics Office distributed and received the schedules through the post, and the compilation was undertaken by the Ontario Bureau of Industries.

Dominion Monthly Crop Reports. In June, 1908, the Census and Statistics Office instituted a system of monthly reports on the condition of agricultural field crops and live stock, combined with annual estimates of areas and yields and numbers of farm animals, based upon an assumed datum line. In 1908, this datum line was arrived at partly by the results of the Northwest Census of 1906, partly by the figures of 1907 for the Agricultural Census of Eastern Canada, above referred to, and partly by the local statistics published by certain of the provinces. British Columbia was left out of the calculation, so far as areas and yields of field crops and numbers of live stock were concerned, since for this province no data were available later than the Census of 1901.

For the purposes of this crop-reporting system, voluntary correspondents were appointed from amongst practical farmers throughout the Dominion. At the present time these correspondents number 3,633 distributed by provinces as follows:

Province.	No.	Province.	No.
Prince Edward Island...	93	Manitoba...	231
Nova Scotia...	234	Saskatchewan...	726
New Brunswick...	125	Alberta...	456
Quebec...	721	British Columbia...	80
Ontario...	967		
Total...			3,633

Each correspondent reports for his own immediate district, being expected to supplement his personal experience by local inquiries made to the best of his ability.

During the growing season (May to September) the correspondents at the end of each month report the condition of the principal field crops and of live stock upon schedules supplied. Condition is expressed numerically by means of percentages of a 'standard condition,' which is represented by 100 and is defined 'as a condition of growth and vitality such as would accompany a crop starting out under favourable conditions and not afterwards subjected to unfavourable weather, insect pests, fungus diseases, frosts or other injurious agencies.' Correspondents are instructed to report the percentage of this standard under the following five heads: (1) Full crop denoted by 100 or if better than a full crop by any number above 100; (2) good, 75 to 99; (3) average, 50 to 74; (4) fair, 25 to 49; (5) poor, under 25. In the case of live stock 100 represents a healthy and thrifty state, and correspondents use their judgment in reporting condition by figures above or below this standard.

After completion of the seeding, correspondents report upon the areas sown, expressing their calculations by percentages above or below the area under each crop in the previous year. Average figures are thus obtained by provinces and for Canada which are applied year by year to the previous figures of area. Before harvest preliminary estimates of the yield per acre for each crop are collected from the correspondents and these, multiplied by the areas, give the estimated total yields. Revised figures of yields per acre and of values are collected from the correspondents after the completion of threshing, and the final report on areas, yields and values is published after the close of the calendar year. The numbers of live stock are estimated in June upon the same principle.

The services of the correspondents reporting to the Census and Statistics Office are utilized for other inquiries such as farm values, wages of farm help, stocks of grain on hand, etc.; and in February of this year a special statistical inquiry into the average cost per acre of grain growing was conducted by their co-operation in the filling up of schedules.

The crop-reporting system of the Census and Statistics Office furnishes information not only for use in Canada but also for the collection of data required by the

Rome International Agricultural Institute to which Canada is one of 50 adhering countries. Every month, therefore, a cablegram is despatched to Rome giving for Canada, as a whole, information respecting the condition during growth of such of the field crops as come within the scheme of the Institute and, as available, data also of the areas and yields of these crops. Condition is required by the Institute to be expressed wherever possible in percentages of a decennial average. Under the Institute's system of crop-reporting 100 represents a condition of the crop which will give a yield per unit of area equal to the average yield of the past 10 years, supposing that the crop in question will not be subjected to the effect of any extraordinary phenomena up to the time of harvest. So far as Canada is concerned data are not yet available for a ten years' average. The Census Office correspondents cannot therefore use this system in their reports nor can the Office use it in reporting to Rome. But since last year the principle of the system has been adopted by the Census Office, who in cabling to Rome convert the figures of condition expressing the percentage of a standard into those of an average based upon the number of years available, viz., three in 1911 and four in 1912. Each year as it passes will add to the number upon which the average can be based.

Besides the reports on field crops of the Census and Statistics Office a Fruit crop report is issued on the 15th of each month from May to September by the Fruit Division of the Dairy and Cold Storage Branch of the Department of Agriculture. It is compiled from information furnished by about 3,000 correspondents, located in the fruit districts and for the most part actually engaged in growing fruit. It embraces not only the crop of each kind of fruit, but deals also with the principal varieties of each particular kind. With the season of 1912, the Chief of the Fruit Division commenced a system of numerical expression of the condition of fruits, which is based upon that employed by the Census and Statistics Office for field crops as above described. The International Institute of Agriculture has lately added wine and grapes to the subjects upon which the adhering countries are required to report; and the Census and Statistics Office, in reporting to the Institute through the Canadian Correspondent, now includes reports on grapes as obtained from the Fruit Division. Tobacco has recently been added to the list of crops upon which the Institute reports concerning condition, areas and yield. The Census and Statistics Office has expressed to the Institute its willingness to make the necessary arrangements for this service in conjunction with the Tobacco Division of the Department of Agriculture; but pending compilation of the complete returns of the Census, which will give the areas under tobacco, no definite steps in this direction have yet been taken.

Provincial Statistics and Crop Reports. The following is a statement showing the present stage of development in each of the nine provinces as regards (A) agricultural statistics and (B) reports on condition during growth. It is based upon information collected specially from each province early in 1911.

Prince Edward Island. (A) No statistics are published of areas under field crops; but an annual statement is made of total yields and values of the principal crops. A census of live stock was taken in June, 1907. Numbers of live stock in succeeding years have been estimated according to the increase or decrease per cent compared with the previous year.

(B) There is a corps of about 400 crop correspondents of the Department of Agriculture, one in each township. In addition, crop reporting forms are sent to all Islanders who attend the Agricultural College at Truro, about 150 in number, and to the presidents and secretaries of the different Institutes. The ground is also covered by special inquiries of an officer of the Department, and results are checked by telephonic references to merchants. Two reports are made during the year, one about July 25 and the other about one month later. Under the heading of 'General Conditions' correspondents are requested to fill in numbers above or below one hundred, which figure represents average conditions at the time of the year when the report is made.

Nova Scotia. (A) Annual estimates are published of areas and yields of the principal field crops in a crop report issued in December. The information is obtained upon schedules returned by correspondents, the number replying being about 130. The figure 100 is taken to represent the crop of the previous year, and correspondents are required to estimate the increase or decrease per cent, and also to estimate the average yield per acre.

(B) A crop report relating to condition is issued in July, also based upon the returns of correspondents. In this report the state of the crop is expressed by a percentage as compared with the previous year and also as compared with the average. The schedules are sent to the secretaries of the agricultural societies and to leading representative farmers in the various counties.

New Brunswick. (A) Annual statistics of the area and yield of wheat, oats and buckwheat have been collected for 15 years and of potatoes for 13 years. They are published by counties each year with comparative figures for the four previous years. The method of collection is to issue in October of each year a circular and schedule to the secretary of each school district in the province. The school district represents a definite area, and the Secretary of the Board of Trustees has charge of the collection of school taxes, knows the valuation and has an inventory of each farm. Taking one year with another upwards of 50 per cent of the forms are returned properly completed. The numbers of live stock are returned upon the same form.

The statistics collected are published in the Annual Report of the Department of Agriculture, and the Report of 1911 contained the following paragraph:

It is to be hoped that in the near future arrangements can be made by the Dominion Government whereby accurate returns for the agricultural products of all Canada may be obtained under a universal system. At present in this province we have to depend upon the public spirit, good will and kindness of the secretaries of the School Board in each district for our returns. No provision has been made to compensate these men for their time and trouble. Consequently we have no reason to expect that all of them will furnish the district or that any of them will continue this work indefinitely. Many statistics which we do not gather at present are also desirable, and it is sincerely to be hoped that some plan may be evolved whereby a more satisfactory service can be given.

(B) No attempt is made to report on the condition of crops during growth.

Quebec. (A) No agricultural statistics are collected.

(B) The Department of Agriculture issues each year two Bulletins on the state of the crops, one in July and the other in October. The information is collected upon blank post cards, which to the number of 2,000 are sent to the parish priests, the secretaries of agricultural clubs, and others including certain members of the Legislature, the members of the Council of Agriculture, and some of the secretaries of municipalities. On these cards spaces are provided for description of all the crops under the headings of 'excellent,' 'good,' 'medium,' and 'bad,' the correspondent being requested to place a cross in the space according as the crop answers to one or other of these descriptions. In the Bulletin these descriptions are converted into per cent numbers given by counties, by groups of counties, and for the province; but no explanation is given in the Bulletin of the method of expression thus adopted.¹ Each Bulletin occupies about 22 octavo pages and contains also reports on the crops of Canada and of other countries taken apparently from the Census and Statistics Monthly and the reports of the International Agricultural Institute.

Ontario. (A) Annual agricultural statistics have been collected by the Bureau of Industries since 1882, when the present Chief of the Census and Statistics Office

¹ In a letter received from the Quebec Department of Agriculture it is explained that 100 represents the note 'très bien,' 75 'bien,' 50 'médiocre,' and 25 'mal.'

occupied the position of Secretary. They cover practically all varieties of field crops and the numbers of live stock. The present method of collection is partly by direct returns from occupiers and partly by estimates based upon the returns of correspondents. Early in June a circular with schedule is issued under statutory authority to the clerks of municipalities requesting information *inter alia* as to the acreage of assessed, cleared, wood, slash, marsh or waste lands. In July a card is issued to farmers asking for the areas sown to crops and the numbers and market value of live stock; also quantities and values of wool, beehives and the value of farm property and implements. In August preliminary estimates are collected of the yields per acre of the earlier crops and in November for all crops. Average market prices received by growers are collected in February in respect of the previous season. Bulletins containing the results of the inquiries made are published in August and November, and the agricultural statistics as finally completed are included in the Annual Report of the Bureau of Industries.

(B) In April, August and October circulars are issued to correspondents requesting a large variety of detailed information respecting the condition of crops, the probable yield per acre, the cause and extent of injuries, and inviting also general remarks. No system of expressing condition numerically appears now to be adopted. The results are published in Bulletins of the Bureau of Industries. The correspondents are furnished with copies of the Bulletins issued by the Department and the Annual Reports of the Bureau of Industries, the Ontario Agricultural College, the Experimental Union, the Dairymen's Associations, Farmers' Institutes, Live Stock Associations, etc.

Manitoba. (A) Agricultural statistics have been collected annually by the Department of Agriculture since 1883, with the exception of 1888. The information is collected upon cards from correspondents twice yearly for the purpose of two Bulletins issued in June and December. The correspondents are 770 in number, one for each township where there is any cultivation or live stock or both. The card for the June Bulletin, issued in May, requires the number of acres sown to crops in each township and a variety of other information, including the numbers of live stock. The card for the December Bulletin issued in October requires, with other information, the average yield per acre of the crops sown and the number of threshing outfits and names and addresses of the owners. Correspondents have the privilege of receiving regularly an agricultural newspaper, and arrangements were also made for the presentation to them of free copies of the work on Farm Weeds issued by the Dominion Department of Agriculture.

The June Bulletin gives particulars as to the acreage under the chief crops by districts, the numbers of farm hands and female servants employed and required and the numbers of live stock. The December Bulletin repeats the areas, and gives the total yields and yields per acre as well as other information, including the figures of previous years for comparison.

(B) Reports on the condition of crops are obtained on the same cards as used for the statistics. They are supplied in the form of general remarks and are summarized in the Bulletins. No system of numerical expression of condition is adopted.

Saskatchewan. (A) The province of Saskatchewan was created in 1905; but statistics relating to the principal field crops of the province have been published by the provincial Department of Agriculture for each of the years 1893 to 1911. A great variety of agricultural information is collected from correspondents by the Department of Agriculture, who endeavour to have one correspondent in each of the townships within the cultivated area. This area is divided into nine crop districts. In 1910 the number of correspondents was stated to be nearly 1,600. In July agricultural returns giving the areas under crops and the numbers of live stock are collected from the farmers and ranchers of the province, 'the aim being to reach every farmer in the province.' Only a proportion of the farmers and ranchers who

receive the schedules make returns. The final figures published by the Department are compiled from these returns, and the estimated crop yields and other data are based upon the reports of the crop correspondents. Letters and blank schedules are issued to the correspondents at intervals from January to the end of the year. In April preliminary estimates of areas under wheat, oats, barley and flax are collected from correspondents in the form of percentages of the areas under these crops in the previous year.

(B) During the season information is collected from correspondents on the condition of crops during growth, and condition is expressed numerically by percentages of a 'standard condition.' This is defined as meaning 'a state of normal average growth such as is commonly seen at the stage when the report is made.' If the crop is better than usual it is indicated by a number over 100, if poorer by a number less than 100. A very satisfactory condition compared with other years is indicated by a number between 100 and 125, a fair condition by a number between 50 and 74. For the further guidance of the correspondents it is stated that the Department would regard as 'average' in the wheat crop a condition that pointed to or promised an average yield of from 18 to 20 bushels per acre. The condition of live stock is also expressed numerically in percentages of a standard condition, which has the same definition as that given by the Dominion Government, viz., a healthy and thrifty state, the figure 100 indicating a 'condition of normal healthfulness, thriftiness and flesh.' A number between 75 and 100 indicates a good, between 50 and 74 an average, between 25 and 49 a fair, and below 25 a poor condition.

In 1911 the Department inaugurated a system of telegraphic crop-reporting, and bulletins based upon the information thus obtained were issued fortnightly since the beginning of May. The report of the Department states (Bulletin No. 26, 1911, p. 18) that 'this system marks a somewhat unique departure, as no other Department of Agriculture on this continent has as yet adopted this method of collecting and disseminating information on growing crop conditions.'

No money remuneration is given to correspondents, there being no appropriation for this purpose; but at the close of each year they are invited to choose an agricultural paper for the ensuing year and the Department pays the annual subscriptions to the papers selected. Agricultural books are occasionally also distributed free to correspondents.

Under the ordinances in force threshers are required to send returns to the Department of Agriculture of the areas and yields of wheat, oats, barley, flax, spelt, etc., threshed by them for farmers. For this purpose small blank ruled books are supplied. Failure to make the return incurs liability to a penalty not exceeding \$25, and to threshers who send in their returns before December 31, the choice is offered of one of three agricultural papers to be sent free for one year from the ensuing 1st of March.

Alberta. (A) This province was also created in 1905; but the annual agricultural statistics of the provincial Department of Agriculture go back to 1899. The statistics are obtained through a voluntary crop-reporting service with about 740 correspondents. The Department aims at securing a correspondent in every township, and though there was not a correspondent in every township in 1911, the province was then stated to be pretty well covered. Four schedules are despatched to the correspondents in the year, and the following extract from a letter of the Department, dated February 23, 1911, explains their use:

Form No. 1, mailed to the Department shortly after May 1, is a report on the condition and acreage of fall sown crops, the acreage of spring sown crops under cultivation, or for which land is being broken, and the average farm price obtained in the previous year for crops as stated therein, the date of fall seeding, and when finished. Form No. 2, mailed to the Department about June 20, reports on the condition and acreage of spring sown crops, the condi-

tion of fall sown crops, the date of spring seeding commenced and ended and a report as to the weather conditions. Form No. 3, mailed to the Department as soon after July 20 as possible, gives the general state of the weather since the previous report, the condition of the crops at that time and an estimate of their yield. Form No. 4, mailed to the Department about October 15, gives approximate yields of roots and hay, the duration of harvest, areas sown to winter wheat and estimate of increase; also the numbers of cattle, horses, etc., in the township from which the report comes.

(B) The condition of the crops is judged in per cent numbers from their appearance compared with their condition at the same date last year—whether for instance so much per cent better or worse. Correspondents receive a premium of one year's subscription to any agricultural periodical. The province is divided into 36 crop districts.

Under ordinances similar to those already referred to in the case of Saskatchewan each thresher is required to furnish the Department of Agriculture with returns of quantities threshed under penalty for default not exceeding \$25. A premium of a year's subscription to one of five selected agricultural newspapers is offered to threshers who duly make returns. The yields of the different grains in the province are compiled from the threshers' returns and are expressed in bushels by threshers' measure and not by weight. In 1911 there were approximately 1,000 threshers in the province.

British Columbia. Nothing systematic in the way of agricultural statistics or crop reports has been attempted by this province previous to 1911; but a beginning has now been made, and a report published April, 1912, on the agricultural statistics of the province for 1911 is the first of an intended annual series. The returns are obtained through voluntary correspondents, of whom 221 were enrolled last year, and the province has been divided into six districts. The methods of collection are not described. A table is given showing for agricultural products the home production, the imports from other Canadian provinces and the imports from points outside Canada.

Differing Results. Under the conditions described material differences arise between on the one hand the census figures and the annual crop estimates of the Dominion Government itself, and on the other hand between the Dominion and the Provincial Government statistics or estimates. The following are typical instances selected for the purpose of illustration.

Census Statistics and Census Office Estimates. For the year 1911 the areas based upon the Census Office estimates were found by the Census to have been excessive by 386,848 acres of barley, 1,059,880 acres of oats, 49,403 acres of potatoes and 599,058 acres of hay and clover. If there had been no census in that year these areas would have been used for the calculation of total yields, which would thus have been overestimated by 11,196,000 bushels of barley, 39,977,400 bushels of oats, 7,109,000 bushels of potatoes and 995,000 tons of hay and clover.¹

Census Office Estimates and Provincial Statistics or Estimates. It is notorious that the Dominion and provincial crop estimates are hopelessly at variance. An analysis of the differences for wheat, barley, oats and flax and for live stock in respect of one year (1910) was published in the Census and Statistics Monthly of August, 1911, pp. 197-201. It need only be mentioned here that for wheat in Ontario the Dominion figures were 143,292 acres (16 p.c.) and 4,522,000 bushels (20 p.c.) less than those of the province, and that for oats the Dominion figures were in excess of those of the province by 514,067 acres (18 p.c.) and 26,832,000 bushels (26 p.c.), and for the

¹ For a more detailed comparison of the Census Office estimates with the statistics of the actual census see the Census and Statistics Monthly for January, 1912, pp. 6-8.

whole of Canada the per cent differences for the cereals named ranged from 2.75 wheat to 12.79 oats, the Dominion figures being the larger. In the case of oats the net difference represented 36,667,000 bushels.

Census Figures and Provincial Statistics or Estimates. The figures of the Census being truly statistical, that is data obtained from the addition of units, it would be reasonable to expect that where the provincial authorities issued figures based upon per cent estimates compared with the previous year the statistics of the Census should be used for the calculation in preference to the local estimates. This has almost invariably not been the case, the local Departments having apparently more faith in their own estimates than in the figures collected by the Census from each occupier. The following are instances of differences between the Census and provincial figures for 1911:

AREA.

Crop.	Census.	Province.	Difference.	
	acres.	acres.	acres.	p.c.
Manitoba—				
Wheat.....	2,979,734	3,339,072	+359,338	+ 12
Oats.....	1,260,736	1,628,562	+367,826	+ 29
Saskatchewan—				
Wheat.....	4,704,660	5,232,248	+527,588	+ 11
Oats.....	2,124,057	2,192,806	+ 68,749	+ 3
British Columbia—				
Wheat.....	7,055	14,407½	+ 7,415½	+105
Oats.....	33,148	38,560½	+ 5,412½	+ 16
Hay.....	82,916	107,613	+ 24,698	+ 30

YIELD.

	bush.	bush.	bush.	p.c.
Manitoba—				
Wheat.....	60,275,000	61,058,786	+783,786	+ 1
Oats.....	57,893,000	73,786,683	+15,893,683	+ 27
Saskatchewan—				
Wheat.....	97,665,000	96,796,588	-868,412	- 0.8
Oats.....	97,962,000	98,676,270	+714,270	+ 0.7
British Columbia—				
Wheat.....	198,000	424,909	+226,909	+115
Oats.....	1,740,000	1,950,129	+210,129	+ 12

Whether these figures differ largely or agree within narrow limits they afford equally an argument in favour of co-operation for the issue of one set of figures upon the authority of both Governments.

From the foregoing it is apparent that in scope the statistics or estimates both of the Dominion and provinces are fairly comprehensive, except as regards the Maritime provinces and Quebec. Reliability is defective throughout, not only by unsoundness or divergence of method, but also because where the Dominion and the Provincial Departments issue differing figures the trustworthiness of both is necessarily called into question. Overlapping and unnecessary duplication of effort are apparent from the fact that there are in each province two sets of agricultural correspondents, one set reporting for the province and the other for the Dominion. In the work of crop-reporting the provincial methods for the expression of the condition of the crops differ *inter se*, differ from those employed by the Dominion Government and differ

from the methods laid down by the International Agricultural Institute for the guidance of adhering countries.

Agricultural Statistics of the Indian Reserves. For many years the Department of Indian Affairs has published in its Annual Reports agricultural and industrial statistics of the Indian Reserves for the year, including information as to lands, buildings, agricultural implements, live stock, general effects and the areas and yields of grain, root and fodder crops. These statistics are entirely independent of the annual agricultural estimates of the Census and Statistics Office. According to the last report available, that for the year ended March 31, 1911, the Indian population engaged in agriculture in 1910 numbered 89,290, and from 58,550 acres under crop they produced 1,494,452 bushels of grain and roots and 123,198 tons of hay, the whole having a value of \$1,460,462. A considerable and apparently increasing surplus of the produce grown comes into the market. The statistics are collected by the Indian Agents, who are resident upon the Reserves and are thoroughly acquainted with the conditions. They are obtained and published entirely for the purposes of the administration of Indian Affairs.

International Crop Reports and Agricultural Statistics. In January, 1910, the International Agricultural Institute inaugurated a service of Agricultural Statistics and started also a scheme of international crop-reporting. Canada as one of the adhering countries undertook to do its share in furnishing the necessary data, and the Dominion Crop-reporting Service, started in 1908, had thenceforth the double object of meeting the national requirements of Canada and the international requirements of the Institute. After the formation of the Institute an officer of the Department of Agriculture was appointed Canadian Correspondent of the Institute and charged with the duty of receiving and distributing the Institute's publications in Canada and of acting as the intermediary for the transmission to Rome of the information officially supplied by Canada. Subsequently the same officer was appointed to be Chief of the Publications Branch for the distribution of the Department's own publications.

Abstracts from the Institute's Bulletin of Agricultural Statistics have from the beginning been published in the Census and Statistics Monthly. The Canadian Correspondent issues Bulletins giving the same information in greater detail. In these Bulletins at the present time the Canadian Correspondent gives not only the information received from Rome but also a variety of other crop reports from both official and non-official sources, which have always been a feature of the Census and Statistics Monthly. Hence there is a duplication through the same statistics appearing in the publications of two Branches which until the recent transference of the Census and Statistics Office to the Department of Trade and Commerce were both in the Department of Agriculture.

Official Prices of Grain. There are no really satisfactory official statistics of grain prices. The subject is one of considerable difficulty and from an international point of view is engaging the attention both of the International Statistical Institute and the International Agricultural Institute. At present in Canada monthly wheat prices on the Winnipeg Grain Exchange for a series of years are given in Part V of the Annual Report of the Department of Trade and Commerce. The Labour Department gives newspaper quotations of grain for the calculations of its index numbers. The Census and Statistics Office publishes annually in December estimates of the average values per bushel or per ton of the produce of field crops as returned by correspondents, these values representing the local prices received by farmers. Of the provinces only the Departments of Agriculture in Ontario and Saskatchewan publish statistics of grain prices. The Ontario Bureau of Industries gives annual average market prices by counties and districts for cereals, corn, hay and potatoes. The Saskatchewan Department of Agriculture gives weekly for wheat, oats, barley and flax by grades the

cash prices of grain in store at Fort William and Port Arthur, the cash prices of wheat in three grades at Minneapolis and the prices of flax at Duluth.

Resolutions of the International Statistical Institute. At its meetings held biennially in different capitals this body has devoted considerable attention to the perfecting of agricultural statistics from the international point of view. The following resolutions were passed at Berne, in 1895¹:

1. That in order to appreciate the conditions of agricultural exploitation and the changes produced therein, it is absolutely necessary to acquire as exact a knowledge as possible of the areas devoted to the cultivation of different agricultural products.

2. That the most efficacious means of arriving at this knowledge is by an individual census of agricultural occupations. In those countries where farmers can be trusted to give exact information as to their holdings, this census should be annual, whilst in those where the information must be largely collected by local authorities or by agents *ad hoc* the census should be quinquennial or even decennial in preference to a collection of data every year by means of estimates.

3. That where it is impossible to obtain an exact census of all the areas under different crops, data should be collected for all the exploitations that are possible, estimates being only employed to supplement data in default. These estimates should be made for local districts that present some degree of equality in the conditions and should be made separately for large, medium and small holdings. As to the method of estimating, it is preferable to distribute the areas under different products in proportion to the areas devoted to these products in a number of holdings of which an exact census has been taken. It is desirable that inquiries into the distribution of areas devoted to different products should be undertaken separately from those relating to the yield.

4. The best time to collect data of areas under cultivation is the month of June.

Statistical Conditions in the West of Canada. Between July 1 and August 21, a member of the Commission visited the four western provinces of Manitoba, Saskatchewan, Alberta and British Columbia, and as a result of conferences and interviews with numerous authorities and representatives of different interests, the following plans for dealing with the crop and other statistics of the western provinces are here outlined:—

Crops and Statistics. These naturally fall under two heads: (A) Returns of acreage sown and periodic reports on the condition of the crops between sowing and harvesting; (B) Returns of the yield of the different grains, and of the disposal of each crop within and without the areas of production.

(A) **Areas sown and Condition during Growth.** At present various independent agencies are collecting information as to the areas sown and the subsequent condition of the crops. Chief of these are: (1) the Dominion Government through the Department of Trade and Commerce; (2) the various Provincial Governments through their Departments of Agriculture; (3) the chief railway companies of the West; and (4) the leading agricultural implement companies. Various elevator and milling companies, leading grain dealers and some of the newspapers are also engaged in collecting statistics with reference to the areas and condition of the crops. The work of these agencies represents a great deal of overlapping and waste of energy, while no part of the field reported upon is dealt with in an adequate manner. However competent some of the reporters may be they are required to deal with too large areas to permit of their reports being quite accurate. What is required is one reporting staff, the members of which shall be

¹ Bulletin de l'Institut International de Statistique, tome ix, 2e livraison, pp. LXXVIII et 127.

carefully selected, and assigned sufficiently small areas to permit of their being personally visited and carefully reported upon. Further, this reporting staff should be supervised by a number of district inspectors, who should be specially qualified and disinterested persons, such as the instructors of agricultural colleges, demonstration farms, or agricultural institutes. This local supervision is indispensable to the obtaining of the best qualified local reporters, having them properly instructed as to their duties, and ensuring adequate, intelligent and prompt reports upon the condition of the crops.

The reports thus obtained through the co-operation of the Dominion and Provincial Governments should be sent in duplicate to the Dominion and provincial authorities and be promptly issued to the public. If this reporting service can be adequately and promptly rendered, it will be greatly appreciated by the railroad companies, the agricultural implement companies, the grain and produce dealers, the banks, wholesale and retail merchants and all others interested in the grain trade of the West. With an adequate Government service, the railroad companies and others could dispense with the present costly and unsatisfactory efforts which they are compelled to make in order to secure information vital to their business and which they do not consider they obtain from the present statistical organization. In consideration of the information supplied and the relief afforded by an adequate service, the railroad and other corporations interested in the business of the western provinces would be willing to assist in furnishing such information as may be essential for statistical returns required in other directions.

(B) **Total Volume of the Crop and its Disposal.** The greater part of the crops in the West is threshed immediately after harvest by travelling threshers. A few of the wealthier farmers have their own threshing equipment, but the proportion of the crop threshed in this way is quite small. Practically all threshing machines in operation are equipped with recording attachments which register the amount of grain passing through them. These records, which are necessary alike for the farmer and the thresher, are kept in books for future reference. Under a system of provincial license, at present partially established, the names and addresses of all the threshing outfits would be available, and they could be required to make returns from time to time of the various grains passing through their machines. The securing of these returns would require to be under the supervision of the district inspectors already referred to, assisted, where necessary, by the local reporters. Through the same channels, returns could be obtained from the few farmers who do their own threshing. Once the threshing was finished, if the returns were properly collected, there would be practically a complete record of the annual harvest.

In obtaining complete and reliable statistics as to the disposal of the crop, little new mechanism is called for. It simply requires that the sources of information which already exist should be co-ordinated, with a view to obtaining accurate and comprehensive results. The existing sources of information and their relation to the problem before us may be briefly summarized.

In the first place the Warehouse Commission at Winnipeg obtains and can furnish accurate returns of all grain passing through the elevators and mills on the railway tracks throughout the three western provinces. The remainder of the grain which is shipped, being nearly fifty per cent of it at present, is loaded over the platforms directly into cars by the farmers themselves. The railway companies can furnish complete returns of these cars. Although the amount placed in each car at the time of shipment is not registered, yet it is accurately determined and recorded when the cars are delivered. An accurate average for each carload is thus obtained each season and is found to vary very slightly from one season to another. This average can thus be safely applied in advance to the number of cars loaded the following season. From these two sources we obtain a return of practically all the grain which is shipped from the local centres. The amount of grain which is eventually shipped out of the area of the three northwest provinces can be determined from

the returns of the grain inspected for shipment, checked by the actual shipments from the terminal elevators and the customs returns of the amount passing directly into the adjoining States. The shipments into British Columbia can also be furnished by the railway companies. This factor, which is not very important at present, is expected to increase greatly after the opening of the Panama Canal.

Beyond the grain passing through the elevators and mills on the tracks and the amount loaded over the platforms, the most important factor to be considered is the amount of grain delivered directly by the farmers to local mills not on the railway tracks. An accurate return of this can be obtained through the Northwest Millers' Association, which includes or has a record of all such mills. The returns so far considered would cover all the grain of the Northwest Provinces which is shipped or milled. There would thus remain to be considered only the unshipped grain which is retained by the farmers, namely the grain retained for seed or feed. The average amount of grain required for seed can be determined from the returns as to the acreage sown. The remainder of the crop, apart from a small amount held by the farmers in private storage, would represent feed. If, therefore, the threshers' returns, already referred to, are at all accurate, the amount retained for feed can be easily determined.

At present there appears to be very little grain held over from one season to another in the hands of the farmers. An increasing amount may of course be held until the following spring; but the amount retained beyond the following harvest is at present a negligible quantity.

Live Stock. Apart from the grain trade, at present much the most important interest in the three prairie provinces attaches to the live stock industry. Live stock, not being subject to the same definite annual cycle as the grain crops, cannot be dealt with in the same manner or with quite the same accuracy. It was agreed by those best acquainted with this industry that the best medium for obtaining accurate annual returns of the increase and disposal of the live stock in the hands of the farmers and ranchers would be the municipal assessors in the different provinces. In making their annual assessment, these officials could also obtain returns of the live stock in the possession of each individual in their respective townships. These returns should distinguish the increase by birth and purchase, and the decrease by death or sale, the stock sold being distinguished as live or as carcass.

From these returns, however, there would remain a considerable margin to be dealt with in certain portions of the unorganized territories of the provinces, where municipal institutions have not yet been established. There are, however, certain provincial and other agencies dealing with these regions from whom fairly accurate returns can be obtained, with the assistance of the district inspectors, referred to in the case of the grain reporting.

Returns as to shipments of live stock, both within the provinces and for export, can be obtained from the railway companies and from the chief packers and dealers in meat supplies. At present, owing to the western demand for meat quite out-running the local supply, there is little or no export of cattle or meat from the prairie provinces except into British Columbia.

Fisheries. Three authorities collect statistics with regard to the Canadian fisheries: (1) the Dominion Department of Marine and Fisheries; (2) certain of the provinces; and (3) the Census and Statistics Office.

The Department of Marine and Fisheries publishes its statistics in two forms: (1) a Monthly Bulletin of Sea-fishery Statistics, limited for the most part to a record of sea-fish caught and marketed in Canada, with similar current statistics of foreign countries—all being primarily for the information of the trade. This Bulletin was begun in 1911. (2) An annual report of the Canadian fisheries, which includes, in addition to an estimate of production founded on the monthly bulletin (finally revised and checked for the purpose), statements with regard to the number of men

engaged in the fisheries, the number of nets, boats, and other appliances used, the number of storehouses, canneries, etc., in operation, their capitalization, output, etc.

These statistics are collected by inspectors, overseers and assistants employed by the Department throughout Canada. The staff of overseers and assistants numbers about one hundred, and is paid salaries ranging from \$60 to \$600 per annum. It is the duty of each sea-coast officer to travel throughout his district once a month and report in full detail to the Department with regard to all fishing operations. Inland officers report once a year.

The situation as between the Dominion and the provinces in the matter of the control of the fisheries requires to be stated for its bearing on the statistics of the industry.

By a decision of the Privy Council in 1898, it was declared that the property rights in the fisheries, which belonged to the provinces prior to Confederation, were still vested in those provinces. The result of this decision works out as follows: The Dominion Department claims control of the sea fisheries of Nova Scotia, Prince Edward Island, New Brunswick, Quebec and British Columbia on the old principle dating from Magna Charta that sea fisheries are a national right. In the case also of Manitoba, Saskatchewan and Alberta, the Dominion has entire control, seeing that these provinces did not exist as provinces prior to Confederation and that the Dominion retained all the Crown Lands on their admission to Confederation. The inland fisheries of Quebec and Ontario, however, are now administered by the provincial authorities, though even here the Dominion retains the sole right to legislate, the provinces being vested merely with administration.

The general effect of the above is that the statistics of the fisheries are, except in the two cases mentioned, in the charge of the Dominion Department. In the case of the inland fisheries of Ontario and Quebec, the statistics are in the first instance collected by the provincial authorities, for though the Dominion has a limited number of officers in these fields, they depend almost entirely upon the provincial officers for their statistical information. In the case of Ontario, the field is important. Inasmuch, however, as the provincial statistics are prepared in much the same way as the Dominion statistics generally, they would appear capable of entering into the general scheme. The inland fisheries of Quebec are less important; but in both provinces, they are operated under a licensing system, and this reduces the difficulty of securing statistics.

The only provinces which have fisheries departments are Ontario, Quebec and British Columbia. The statistics of the two first have just been dealt with. Those of British Columbia appear to duplicate the Dominion Department's work in that province. In any case the field in British Columbia is limited; the operations of the salmon canneries may be arrived at through the companies' books; the halibut fisheries are chiefly conducted through one port; while the herring fisheries are limited to a few areas, these being chief branches of the British Columbia industry.

The Dominion Department may accordingly be said to be in a favourable position to obtain statistics as to the fisheries above referred to. Latterly, increased attention has been paid to the improvement of statistics, the institution of the monthly bulletin being an illustration.

The statement issued by the Census is for the census year and would seem to involve a duplication of the Fisheries Department's annual review of that period. The Census has not the expert point of view of the Department. Annual fishery returns, moreover, require more than a single visit. So much was this felt that the Census of 1900 made extensive use of the Department's figures. For the last Census a suggestion was made that the officials of the Dominion Fisheries Department should collect the census statistics. This, however, would still have meant duplication, except to the extent that the census statistics are for the calendar year, whereas those of the Department are for the fiscal year.

Forestry. The census statistics of forestry products are collected by a special schedule, No. 8, which relates only to the quantities and values of rough products cut by the saw and axe on farms and on timber limits or other large tracts. Statistics of sawn products are collected on the Manufacturers' Schedule No. 9.

Since 1909, the Forestry Branch of the Department of the Interior has been engaged in the collection of annual statistics of forest products, the practice being to publish the results in bulletins relating to separate sections of the lumbering industry and to bring these results into one bulletin when complete. Thus though there may not be duplication of actual statistics, those of the Census being on one basis and those of the Forestry Branch upon another, there is certainly duplication of effort during the census year.

It is claimed on the part of the Forestry Branch that expert knowledge of the lumbering industries is essential to the collection of accurate statistics and that the census statistics besides being collected only every ten years are not sufficiently specific for the practical needs of the industry.

The annual reports of the Forestry Branch are as follows:

1. Report on the production of lumber, square timber, lath and shingles.
2. Report on pulpwood produced and consumed in Canada.
3. Report on timber used in mining operations.
4. Report on the number and value of cross-ties purchased.
5. Report on tan-bark and tanning extract used.
6. Report on cooperage stock manufactured in Canada for tight and slack cooperage and on boxes and box shooks manufactured.
7. Report on the number of telephone, telegraph, electric light and power poles purchased.

The functions of the Branch are primarily instructional and administrative. The staff numbers about two hundred and the annual appropriation amounts to \$374,000. The statistical work is merely incidental to that of administration, two men being employed on compilation and \$2,000 being appropriated for statistical purposes alone.

The Branch is gradually enlarging its statistics, being at the moment engaged in an investigation covering all the wood-using industries of the Dominion.

It is further claimed by the Forestry Branch that reliable statistics regarding the area, situation and quantities available of the different species of timber, the quantity manufactured, the prices and the uses of different commercial timbers are necessary before any wise policy of conservation on forest protection or management can be adopted, or public support for it secured. In order to obtain such statistics the aid is desirable of experts possessing intimate acquaintance with the forest regions of Canada, with the producers and users of forest products and with the qualities and uses of the different Canadian woods. The knowledge of forest products must be secured from different sources: for instance, of lumber and cooperage from the producers; of cross-ties, poles and pulpwood from the purchasers; and of boxes and box shooks from manufacturers and consumers. Technical knowledge and experience are necessary in the compilation of lists of producers from trade directories or other sources, in the preparation of the schedules employed, in the editing and classification of the returns received and, lastly, in the writing of an intelligent report discussing the tables compiled and the conclusions to be drawn.

In foreign countries the collection of forestry statistics is recognized as an important part of forestry administration, and in nearly all countries the collection and study of forestry statistics are undertaken by the Forestry Department. In the United States the machinery of the Census Branch is used. The actual planning of the work is nevertheless done by officials of the Forestry Service, who also edit the returns and prepare them for publication.

On Crown Lands in Canada the Provincial Governments keep records of licenses granted, cut made, etc.

Mining. The statistics of the mining industry of Canada consist of (1) an annual report on production issued by the Dominion Department of Mines; (2) annual reports of the Mines Departments of certain of the provinces; and (3) the report on the results of the decennial Census.

(1) **Dominion Report on Mineral Production.** The annual report on mineral production by the Department of Mines aims primarily to cover all phases of mineral production, metallic and non-metallic. Latterly it has been expanding in the way of adding various details such as statistics relating to labour and wages; these, however, are imperfect. Details such as the value of plants, company earnings, capitalization, etc., are omitted.

Several difficulties of a special nature are involved in the collection and analysis of mineral production statistics. For example, it is useful to estimate the total value as well as the amount of production for the purposes of final total comparisons with other countries, or as between the several provinces. The obtaining of values, however, is in many cases difficult, especially when sales of mineral products are not made in the year in which the products are mined. The Mines Department, accordingly, lays the chief emphasis upon its return of quantities. Again many difficulties emerge in the collecting and estimating of production. The methods of Canada and the United States, for example, differ fundamentally from those of Great Britain, in that the former seek to obtain an estimate of metals 'recovered or recoverable,' *i.e.*, of the ultimate manufactured product, whereas the latter lays chief stress on the return of crude products.

A handicap of the Dominion Department of Mines in the collecting of statistics is that it has no legislative authority to demand returns of production, the provinces being vested with the control of mining legislation. The issue of monthly statistics on such items as coal, iron and steel production has not been attempted. No system of co-ordination between the Department and other statistical branches exists. The Department comes automatically into touch with a voluminous correspondence on the subject of the mineral resources of Canada; the Statistical Branch is also able to obtain from the field force of the Geological Survey its information as to operating companies, etc.

(2) **Provincial Statistics.** The character and extent of the mining statistics of the several provinces differ considerably. The Mines Departments of Ontario, Quebec, Nova Scotia and British Columbia issue complete returns annually. New Brunswick returns are less complete. Alberta and Saskatchewan issue statistics of coal production. Manitoba and Prince Edward Island have no mineral statistics.

The mining statistics of the provinces being collected under legislative authority cover various phases of the industry, instead of being virtually restricted to production alone as in the case of the statistics of the Dominion Department.

Where an industry presents such varied conditions according to locality as mining, and where legislation differs to such a degree as the mines acts of the various provinces, differences in statistical methods and results are almost bound to occur. Especially is this the case in statistics of production. Perhaps the most frequent criticism of Canadian mining statistics is that those of the provinces are collected on different bases and are, therefore, not comparable *inter se*. The Dominion Department of Mines, again, proceeds from its own view-point, and apparent discrepancies and contradictions result.

Some of the differences as between the provinces in their methods of recording production are as follows: (1) All the provinces do not use the same statistical year. (2) Some of the provinces estimate total output; others only actual sales. (3) Some of the provinces make no attempt at valuation, others differ in their methods of valuation, their sources of market prices, the inclusion or exclusion of products from imported ores, etc. (4) Even the estimating of quantities is, in the case of smelter products,

subject to variation, some of the provinces estimating the metal content of the unrefined ores and others actual smelter products.

For purposes of comparison between the provinces the Dominion statistics are available as a corrective of differences in provincial methods.

A conference between the mining departments of the several provinces and the Dominion Mines Branch, or the discussion of methods and the harmonising of results, has frequently been proposed, but has never hitherto materialized.

(3) **Census Statistics of Mining.** The decennial returns of the Census on Mining are presented from a broader outlook than those of the Mines Department inasmuch as they cover capital, plant, employees, wages, etc., as well as production. The statistics are collected on a single schedule, which is necessarily of wide range; but the statistics of production collected by the Mines Branch are more detailed than those of the Census and require twenty-five schedules which are varied to suit the different branches of the industry.

At the last two censuses of the United States co-operation between the Geological Survey and the Census Bureau was successfully carried out with a view to perfecting from a technical standpoint the information collected by the latter. A discussion with this end in view was held in connection with the preparation of the schedules for the recent Canadian Census, but had no practical result.

Manufactures. A census of manufacturing establishments is taken decennially on a single schedule. In addition, the Census and Statistics Office, between the censuses of 1901 and 1911, undertook a postal census of manufactures in 1905, the results of which were published in a special bulletin. The schedule used in taking this postal census was not so detailed as that used in connection with the decennial enumeration. Only a partial comparison was therefore possible.

A separate schedule in the decennial census is devoted to butter and cheese factories.

The International Statistical Institute recommends certain classifications and analyses of statistics of manufactures which have not yet been adopted by the Canadian Census.

A special bulletin dealing with the beet-sugar industry was issued by the Census and Statistics Office in 1909.

The Ontario Bureau of Labour publishes annual industrial statistics obtained by means of a circular addressed to the manufacturers of the province. The returns are incomplete and the statistics are not on the same basis from year to year.

Massachusetts Census of Manufactures. An annual postal census of manufactures is taken by the Commonwealth of Massachusetts, a State with a population of 3,366,416 and with manufactured products of the total value of \$1,465,749,310 as returned in 1910. The Commission are indebted to the courtesy of the present Director of the Massachusetts Bureau of Statistics (Mr. Charles F. Gettemy) for the following detailed information relating to this Census, communicated in a letter dated November 4, 1912, from which are taken the following extracts:

This work was begun by this Department under an act originally passed in 1886, and I have just issued our 25th annual report under the act. We describe the data thus compiled as Statistics of Manufactures, but these annual compilations are not based upon a complete *census* of manufactures within the strict meaning of such a term.

Our laws have always provided for a decennial census of population, manufactures and commerce, taken midway between the decennial censuses of the Federal Government, so that we have for Massachusetts a quinquennial census of population, agriculture and manufactures; and by an arrangement with the 32793—4

Federal Government, its censuses for Massachusetts are taken through the organization of this Office, the Director of the Massachusetts Bureau of Statistics being designated by the President to act as Supervisor of the United States Census of our Commonwealth.

Supplementing the quinquennial manufactures census, however, we cover a considerable portion of the same field annually, without pretending, since we have not the time nor the facilities, to cover the entire field of manufactures as completely in the non-censal years as in the years when we take the census. So far as reflecting actual conditions, the distinction is largely nominal, for, while in our annual compilations, that is, for the non-censal years, we have returns for perhaps not more than sixty per cent of the entire number of establishments covered in the regular census year, we nevertheless estimate that our data for the non-censal years reflect approximately ninety per cent of the entire product as returned in the census years, while for the leading industries our returns for the non-censal years are as complete as they are in the census years and, therefore, do not constitute for these industries an actual census. I doubt very much whether the results obtained in making our returns for the non-censal years as complete for the smaller establishments as they are when the regular census is taken would compensate for the additional expense involved. Nevertheless, our annual statistics have gradually been approximating each year a great degree of completeness, and to the extent that this is true our annual canvass approximates the genuine census.

Up to 1907 our annual statistics of manufactures had been presented in such a form that comparisons were made only between identical establishments reporting; so that the reports for establishments reporting for the first time in any given year would not be reflected in the report for that year, for the reason that they could not also have made a report for the preceding year. Therefore the data were not comparable for any period of time.

I am enclosing a copy of the schedule such as we mail annually to Massachusetts manufacturers, which they are required by law to fill out and return to the Department. After twenty-five years of experience in this field, we find that about sixty-five per cent of the manufacturers to whom our schedules are mailed returned them voluntarily, approximately all of the larger and more important concerns and industries being represented in the returns thus made; the remaining thirty-five per cent are the smaller establishments or the establishments in the smaller industries, or new concerns not yet accustomed to filling our schedules, and with whom more or less missionary work has to be done, and to obtain satisfactory returns from which it is necessary to send agents into the field. The major part of this field work is done within a period of about 100 days, for which service we employ temporary special agents for this period. The budget for this branch of the work of the department will have involved an expenditure during our current fiscal year ending November 30, 1912, of approximately \$15,455.

In a further letter, dated November 18, 1912, Mr. Gettemy explained that the total cost of the Division of Manufactures of the Commonwealth Bureau of Statistics in 1912 was \$14,405, of which \$10,372 represents salaries and \$4,033 contingent expenses. In the budget estimates for 1913 the total cost was placed at \$16,937 (\$11,220 for salaries and \$5,717 for contingent expenses), the increase in the amounts being largely due to the contemplated publication of an Industrial Directory and also to an increase in the number of establishments to be covered.

Building Construction. There appears to be a growing demand for periodical records of the extent of building construction. These are at present obtainable from various official sources. The decennial census of property enables the number of dwellings, churches, schools, stores, warehouses, barns, stables, etc., to be observed

from decade to decade. The Annual Report of the Department of ~~Statistics~~ includes a record of buildings and plant. The census of manufactures in 1901 distinguished between values of land, buildings and plant; but for the census of 1911 these items were grouped under the single heading of 'Land, buildings and plant.'

The Annual Report of the Comptroller of Railway Statistics includes a record of railway construction, which is being gradually improved.

The Department of Labour publishes an annual review of building operations in localities where a system of building permits exists, and supplements this by estimates for localities having a population of 5,000 and upwards.

The reports of the Public Works Departments of the Dominion and the Provinces furnish still other sources of construction statistics.

TRANSPORTATION AND COMMUNICATION.

Land. The chief agency in the collection of transportation statistics in Canada is the Statistical Branch of the Department of Railways and Canals, which issues railway, tramway, canal, express, telephone and telegraph statistics. Certain railway statistics are also published in the reports of the Board of Railway Commissioners, Canada, and in the reports of the Ontario Railway and Municipal Board, while the Marine Department issues statistics of shipping. The Census does not deal with railway or steamboat companies except as producing concerns.

The Department of Railways and Canals proper takes cognizance of the location of railways and the operations of Government-owned railways and canals, while the Department of Marine similarly administers such matters as steamboat inspection, pilotage, the work of harbour commissioners, lighthouses, etc.

The Railway Statistics Branch reports annually with regard to railways on the following subjects: mileage, capital, aid to railways, traffic, earnings, operating expenses, equipment, train, car and locomotive mileage, fuel consumed by locomotives, accidents, crossings, railway employees, taxation and despatching. A table shows the location of all railways in Canada. Sixteen tables are employed to classify results.

In the case of electric railways a less extensive list of subjects is dealt with, and seven detailed tables are given.

The schedules on which these statistics are collected are identical with those used by the Interstate Commerce Commission of the United States. The above reports are likewise modelled on the reports of that body, as are the forms and reports relating to express and telephone companies. The initial report on telegraph companies has not yet appeared. The year covered is the year ending with June 30,—the statistical year of the railways.

The work of preparing the five reports is carried out by a staff of twelve, all told, and at a salary cost this year of \$18,050.

The report of the Board of Railway Commissioners is chiefly devoted to an account of the proceedings and rulings of the Board. Somewhat extensive statistics of accidents on railways, however, are appended, owing to the fact that the powers of the Board are inquisitorial in respect to causes of accidents. There are, therefore, two series of statistics on railway accidents. In the United States the statistical functions, in Canada attached to the Railways Department, are under the control of the Interstate Commerce Commission, and one series only of such statistics is issued. The two Canadian series do not exactly duplicate each other, as the Board of Railway Commissioners has jurisdiction only over railways operating under Dominion charter, while the Railway Statistics Branch issues returns for all railway companies; moreover they cover different years, besides being from a different point of view.

The reports of the Ontario Railway and Municipal Board are likewise devoted primarily to the proceedings of the Board, but include statistics of steam railways,

street railways and telephone systems operated under Ontario charters. They cover municipally owned and operated utilities. Analyses of railway accidents also appear in these reports.

Reports of the publicly owned and operated telephones of Manitoba and Alberta are issued.

Water. The Department of Marine and Fisheries issues annually a list of the vessels on the register book of the Dominion on December 31. This enables the number and tonnage of Canadian shipping to be noted from year to year. The number of employees on vessels is also noted, as well as the size of each vessel.

The annual canal statistics issued by the Statistical Branch of the Department of Railways and Canals deal less extensively with canal traffic than do statistics of the same office with railway traffic.

Supplements to the annual reports of the Department of Marine and Fisheries contain reports of harbour commissioners, pilotage authorities, port wardens, shipping, and of wrecks and casualties occurring to British, Canadian and foreign sea-going vessels in Canadian waters and to Canadian sea-going vessels in other waters.

An annual statement issued by the Department of Trade and Commerce deals with the subsidized steamship service, and includes statistics showing the steamship traffic on subsidized vessels.

Though the Department of Marine appoints the harbour masters throughout Canada no comprehensive series of port business, traffic landed and shipped, etc., is received.

Postal Statistics. The Annual Report of the Postmaster General contains extensive statistics with regard to the number of post offices, postal note offices, money order offices, savings bank offices, mileage over which the mails are carried by railways, stages, and water transportation, the number and value of postage stamps issued and the general revenues and expenditures of the Department.

The number of letters and post cards is estimated from revenues from year to year. Thus if the revenue for the present year is found to exceed that of 1911 by ten per cent, one-tenth will be added to the number of letters estimated for 1911. Attempts have been made to secure a count of letters for a typical week, but with indifferent success.

The statistics of the Department in general are much the same as those of Great Britain and the United States, though differing in points of detail. They are, however, less complete than those of Germany.

The primary endeavour of the Department is to improve the quality of the service rendered to the people in the actual transmission of mail matter. The nature of that service requires that certain operations, such as the despatch of mails, shall be carried out with the minimum of any delay that may be desirable for statistical purposes.

TRADE AND COMMERCE.

Foreign Trade. Statistics relating to trade between Canada and other countries (exports and imports) are comprised in the following reports.

Trade and Navigation Report. The record of Canada's foreign trade is based on Customs import and export entries, and is published by the Department of Customs in the publications called 'Trade and Navigation Returns,' which are issued in the form of monthly statements and an annual report. Both blue books give classified details of all goods entered for consumption, the country from which imported, whether free or dutiable, and of all goods exported, whether Canadian or foreign, and the country to which exported. On the former the amount of duty collected is set forth as under the general, preferential or French treaty clauses of the tariff. The monthly report also gives the returns for the preceding month of

the fiscal year for every customs port. It states the number of vessels in the foreign trade arriving and departing from Canadian ports, with registered tonnage and freight carried.

Although since Confederation the Department of Customs has been continuously in sole charge of the preparation of these foreign trade returns, it was only in the year 1900 that the work of classifying and aggregating these returns from the customs entry papers was transferred from the custom houses to the Department of Customs at Ottawa. These compilations are now made at Ottawa in the Customs statistical branch direct from the prime entries, with invoices, which have been taken at the different custom houses throughout Canada.

As to the accuracy of the figures from which these compilations are made, no imported goods can be obtained by the importer until after entry at some custom house in Canada where the goods are available for examination by the Customs. These entry papers must be in duplicate, and they show the description and value of each line of goods; these particulars must be established by formal certificate of the exporter and sworn statement of the importer, and also by thorough check of Customs officers. One set of these entry papers and invoices, for each importation received at any point in Canada, is sent promptly direct to the Customs statistical branch for use as a basis for the compilations in the 'Trade and Navigation Returns.' Similarly, sets of export entries for each exportation must be duly executed and sent direct from the port of exit to the Customs statistical branch. These formal entries are required for free as well as for dutiable goods. The truth of the descriptions and values, which are the basis of these trade returns, is assured by certificates of exporters, by sworn statements of the importers who know the facts and who are subject to penalties under the Customs Act if their statements are false, and by check of investigating officers of Customs.

It may be pointed out that the Department of Customs could not permit its invoices and entry papers to be used by any persons other than its own officials. These papers are held by the statistical branch a few days only whilst being tabulated, after which they are transferred to the Customs check branch to be thoroughly checked as to correctness of rates of duty and values for duty, and filed as a record for refund and drawback claims, and for further reference from time to time by the statistical branch in connection with errors discovered by the check branch and through other sources. The administration work of the Department of Customs has frequent need of reference to the records of the statistical branch for entry numbers covering the same line of particular goods entered at different custom houses, so as to see that they are being valued and rated uniformly for duty purposes, and for checking the accountant's record of monthly collections of duty at each custom house, and for other important administrative work.

Origin of Imported Goods. Origin is established by certificate of the foreign exporter and sworn statement of the importer, as well as by provisions for direct shipment in respect of goods entered under the British preferential tariff and under treaties with different foreign countries. The British preferential tariff extends to the products of various British countries enumerated in Section 3 of the Tariff Act. And the countries to which treaty rates extend are the United Kingdom, all British Colonies and Possessions, France, Italy, Belgium, the Netherlands, Norway, Sweden, Russia, Spain, Switzerland, Denmark, Austria-Hungary, Japan, Argentine Republic, Colombia, Venezuela.

The origin of other goods is regulated by the following provision in Section 50 of the Customs Act:

'Provided that goods which have been entered for consumption or for warehouse, or which have been permitted to remain, for any purpose, in any country intermediate between the country of export and Canada, shall not be considered as *in transitu* through such intermediate country but shall be treated as goods imported from such intermediate country and be valued and rated for duty accordingly.'

It would seem that goods imported under this clause and entered for consumption in Canadian Customs accounts, for example, as from the United States, if subject to United States Customs duties, would in the United States records, because of being handled in bond, be recorded as goods *in transitu* for Canada and not taken into account as an export, whilst in Canada they would be taken into account as imports from the United States. However, because of the heavier duties in Canada on such shipments they are of minor importance.

Destination of Exports. Entries of exports are credited in the statistical accounts to the port of exit from Canada when exported by land, and to the port where the goods are placed on the vessels when laden for export in such vessel. The terms of the trade relating to exports are: 'Goods the produce of Canada,' and 'Goods not the produce of Canada,' sometimes called 'Canadian' and 'Foreign' or 'Domestic' and 'Foreign' respectively. The distinction of foreign produce—such goods as have been imported and again exported—is provided for on the entry (Form B. 13), which shows in separate columns whether the goods are of domestic or foreign origin. In doubtful cases the rule is to consider as domestic all imported articles which have been changed in form or enhanced in value by further manufacture in Canada. For accurate particulars of the country of destination of goods exported from Canada the Department of Customs depends on the export entry papers. These papers require the exporter to show the country of ultimate destination of the goods. It is so stated on the entry papers, and it is believed that exporters do show faithfully the country of ultimate destination of the goods, as known to them, as the export entry requires. But there are important cases where the destination of the goods, after exportation from Canada, may be altered in transit without the exporter's knowledge. These cases arise through the purchaser or owner of the goods finding a better market *en voyage* than the market to which they were originally destined. Tramp steamers and electric communication lend themselves readily to such changes in destination. The statistical organization of every country encounters this difficulty without reaching any satisfactory solution. So that where the facts are required as to the exports of one country to another country the import returns of the latter country are the best guide, and as a general rule may be depended on, so far as the entries for consumption are concerned, from countries from which directly exported.¹

Trade and Commerce Report. This is an annual report issued by the Department of Trade and Commerce in seven separate parts, three of which relate entirely to movements of trade. The information therein is compiled from the Trade and Navigation Reports furnished in advance by the Customs Department, and contains figures covering a period of years for comparative and analytical purposes. The report is primarily designed for the furtherance of trade. Certain parts reproduce in different form portions of the Trade and Navigation Report; but the matter contained in each is essential. This Department also publishes a monthly report on very much the same lines as the annual report.

¹ The question of international commercial statistics of agricultural commodities is engaging the attention of the International Agricultural Institute, and communications dealing with this subject were submitted to the third General Assembly of the Institute held at Rome in May, 1911. See especially the following reports: (1) "Plan d'une étude sur les statistiques de l'importation et de l'exportation" par Prof. Umberto Ricci, Chef du Service de la Statistique Générale (Rapports et Etudes du Bureau de la Statistique Générale, Vol. I, pp. 201-219); (2) "Statistiques, officielles et autres, des stocks et des marchandises en voyage." (ibid. pp. 221-259); Rapport de Son Exc. M. G. Zabiello, délégué de la Russie, sur la Statistique Commerciale: "Etude préliminaire sur la question de l'utilisation de la statistique relative au commerce, aux stocks, à l'importation, à l'exportation et aux marchandises en voyage, pour les produits compris dans le service régulier d'information—Statistique des prix." (Assemblée Générale, 3e session, mai 1911, pp. 255-289); (4) Rapport de la 2e Commission (ibid. pp. 313-327).

The seven parts of the annual Trade and Commerce Report are made up as follows:

PART I. CANADIAN TRADE:

Imports into and Exports from Canada. (Itemized and General Statements.)

PART II. CANADIAN TRADE:

1. With France.
2. With Germany.
3. With United Kingdom.
4. With United States.

PART III. CANADIAN TRADE:

With Foreign Countries (except France, Germany, the United Kingdom and the United States).

PART IV. MISCELLANEOUS INFORMATION:

1. Bounties.
2. Lumber and Staple Products.
3. Revenue and Expenditure of Department of Trade and Commerce.
4. Statistical Record of the Progress of Canada.
5. Tonnage Tables.
6. Trade Commissioner Service.

PART V. GRAIN STATISTICS.

PART VI. SUBSIDIZED STEAMSHIP SERVICE.

PART VII. TRADE OF FOREIGN COUNTRIES AND TREATIES AND CONVENTIONS.

It is believed that Canada is singular in the fact of issuing reports by different departments on the trade of the country. In the United States such work comes under the control of the Bureau of Statistics of the Department of Commerce and Labour, while in Great Britain a statistical office connected with the Customs and Excise Department prepares the work for the Board of Trade so far as regards trade information.

Inquiries as to trade addressed to the Government of Canada appear to be dealt with indiscriminately by the Customs or Trade and Commerce Departments.

Trade and Commerce Weekly. A weekly bulletin issued by the Trade and Commerce Department contains reports received from the Trade Commissioners and Commercial Agents of the Dominion, inquiries received at the Department of interest to Canadian producers and other commercial information, including statistics of grain in store at, and grain shipments from the head of the Lakes. The reports of the Canadian Trade Commissioners and Trade Agents contain much valuable statistical matter on imperial and foreign trade.

Discrepancies in Trade Returns of Different Nations. The following statements illustrate discrepancies in the trade returns of different nations so far as they relate to Franco-British Trade, British-United States Trade and British-Canadian Trade:

I. FRANCO-BRITISH TRADE.

Years ended December 31.	FROM BRITISH RETURNS.	FROM FRENCH RETURNS.
	Imports from France.	Exports to United Kingdom
	\$	\$
1910	215,510,697	246,101,634
1911	202,604,224	234,736,057
Years ended December 31.	Exports to France.	Imports from United Kingdom
	\$	\$
1910	162,816,406	179,556,392
1911	172,538,240	191,744,149

NOTE.—The “special” trade and not the “general” trade of France is shown in the above table. “Special” imports are imports for home consumption, “special” exports are exports of domestic produce. “General” imports are total imports, “general” exports are total exports.

The ‘General’ trade of France with the United Kingdom for the same years was as follows:

Years ended December 31.	Imports.	Exports.
	\$	\$
1910	213,225,242	357,101,531
1911	226,212,984	339,053,136

II. BRITISH-UNITED STATES TRADE.

Years ended December 31.	FROM BRITISH RETURNS.	FROM UNITED STATES RETURNS.
	Imports from United States.	Exports to United Kingdom
	\$	\$
1910	572,400,324	550,913,288
1911	597,145,587	538,810,416
Years ended December 31.	Exports to United States.	Imports from United Kingdom
	\$	\$
1910	303,660,684	270,890,309
1911	274,163,569	250,121,992

III. BRITISH-CANADIAN TRADE.

Years ended December 31.	FROM BRITISH RETURNS.	FROM CANADIAN RETURNS.
	Imports from Canada.	Exports to United Kingdom
	\$	\$
1910.....	124,756,445	140,495,937
1911.....	119,690,532	147,418,321
Years ended December 31.	Exports to Canada.	Imports from United Kingdom
	\$	\$
1910.....	110,059,530	107,679,719
1911.....	110,597,827	113,299,362

From the foregoing statements it will be noticed that there is only a slight difference between the imports into Canada from the United Kingdom according to Canadian sources and the exports from the United Kingdom to Canada according to British sources. So far as the Franco-British and the British-United States trade are concerned the differences are large. This is especially true in the case of the Franco-British trade.

The following table shows variations of the statistics of the trade in several important articles between Canada, the United States and the United Kingdom:

IV. CANADIAN, BRITISH AND UNITED STATES TRADE.

Articles and Years.	FROM CANADIAN RETURNS.	FROM UNITED KINGDOM RETURNS.		FROM UNITED STATES RETURNS.
	Exports from Canada to United Kingdom.	Imports into United Kingdom from		Exports from United States to United Kingdom.
		Canada.	United States.	
	\$	\$	\$	\$
Bacon—				
1910	7,060,915	7,054,899	21,672,692	14,819,715
1911	8,536,963	8,730,537	24,661,994	17,309,645
Hams—				
1910	438,475	672,729	11,337,026	15,410,174
1911	447,594	961,283	13,199,797	19,656,888
Lard—				
1910	19,208	567,220	20,444,929	18,934,446
1911	22,758	551,690	19,537,954	17,524,948
Maize—				
1910	1,542,787	1,068,360	7,554,132	5,802,756
1911	2,925,334	2,063,374	13,202,760	11,538,382
Wheat—				
1910	48,041,964	34,357,007	23,151,604	10,556,261
1911	56,710,022	28,422,915	25,545,503	14,460,640
Wheat Flour—				
1910	8,783,005	7,617,481	14,043,263	13,300,016
1911	9,088,516	8,613,421	13,125,721	14,188,924

In the case of Tables II, III and IV it is possible to secure approximately uniform results by adjustment of Canadian goods shipped via United States ports.

Trade of Argentine Republic. From Table No. I below it will be observed that about one-third of the exports from Argentina are for orders. During the year ended December 31, 1910, as shown in Table II, the amount of flax, maize and wheat exported from Argentina for orders was valued at 98,139,827 pesos. The bulk of the goods exported for orders is sent to Portuguese Possessions. In such cases the exporter is not able to state the country of destination. On the arrival of the vessel at, say, Madeira, instructions are handed to the captain or master of the vessel and he at once clears for the best available market.

I. EXPORT TRADE OF THE ARGENTINE REPUBLIC, 1906-1910.

Years ended December 31.	Exports Direct.	Exports for Orders.	Total Exports.
	pesos.	pesos.	pesos.
1906	192,862,359	99,391,470	292,253,829
1907	199,969,640	96,234,729	296,204,369
1908	226,785,505	139,219,836	366,005,341
1909	272,591,459	124,759,089	397,350,528
1910	261,684,484	110,941,571	372,626,055

II. EXPORTS OF FLAX, MAIZE AND WHEAT FROM THE ARGENTINE REPUBLIC, 1910.

Description.	Total Exports.	Exports for Orders.
	pesos.	pesos.
Flax.....	44,604,395	18,353,713
Maize.....	60,260,804	42,096,494
Wheat.....	72,202,260	37,689,620
Total.....	177,067,459	98,139,827

NOTE.—Peso=96·5 cents.

Internal Commerce of the United States. The Bureau of Statistics of the United States Department of Commerce and Labour publishes a 'Monthly Summary of the Commerce and Finance of the United States,' a section of which is devoted to internal commerce. These statistics comprise:

(1) Statistics of domestic commerce on the Great Lakes, that is, records of vessels and freight movements, the latter being classified to show movements of iron ore, pig iron, iron manufactures, coal, salt, copper, lumber, flour, wheat, corn, barley, rye, flaxseed and miscellaneous merchandise;

(2) The movement of certain articles of domestic commerce on the ocean seaboard.

(3) The movement of the principal domestic products and articles of commerce at the more important interior centres throughout the country, compiled for the most part from reports of exchanges and commercial organizations.

(4) Commercial movements on certain rivers and canals received from engineers in charge of river and harbour improvements, lock masters, etc.

The report also maintains a record of production of coal, coke, petroleum and pig iron and of changes in ocean and freight rates.

Two Branches, which are at present under the Department of Agriculture, and which to a certain extent work together, furnish the above-mentioned.

PATENTS, COPYRIGHTS, TRADEMARKS, INDUSTRIAL DESIGNS AND TIMBER MARKS.

The Canadian Patent Office issues a monthly Record, which contains a descriptive account of every invention for which a patent has been issued during the period covered. The descriptions are arranged in the order in which the patents are granted. Altogether about eight thousand patents are issued annually, and the number is increasing. The cost of the Patent Office Record is \$14,000-\$16,000 a year. The Annual Report of the Department of Agriculture contains a brief statement of the business of the Office, showing the total number of patents and certificates granted, fees collected, number of patentees by provinces, number of patents issued to citizens of foreign countries, etc.; but this is essentially an administrative report, and no attempt is made to classify or analyse the inventions covered by the patents. Such a classification or analysis, even if a rough one, might be interesting as showing the trend of invention and the commercial demands of the age which inventors follow.

The Copyright and Trademarks Branch of the Department of Agriculture deals with copyrights, trademarks, industrial designs and timber marks. A weekly statement of the copyrights and interim copyrights granted is published in the Canada Gazette. By arrangement with the Patent Office, also, the Patent Office Record contains a monthly list of the trademarks and industrial designs registered and of the copyrights entered. At the end of the year an administrative statement is published by the Branch, but no further analysis of subject matter is made.

INLAND REVENUE.

The Department of Inland Revenue publishes statistics of (1) Excise; (2) Inspection of Weights and Measures, Gas and Electricity; (3) Adulteration of Food. The statistics under (2) and (3) are records of administrative operations under certain Acts. Secondary use of the statistics of excise is possible as throwing light on production, home consumption and general trade in the articles from which inland revenue is collected, including malt and malt liquors, tobacco, cigars, cigarettes, snuff, petroleum and vinegar. The statistics show in a detailed way the extent of the manufacture of these articles in Canada; they also show exports.

LABOUR.

The scope of the term 'labour statistics' as interpreted by the Department of Labour (a main function of which is defined as statistical by the Act establishing the Department in 1900) is somewhat broad. The general field has been divided in the first instance into two parts, namely: I. Statistics relative to the state of the labour market, *i.e.*, the amount of employment; and II. Statistics illustrative of conditions inherent in particular employments. This is on the principle that the first concern of the employee is usually to secure work, while his second concern is with the nature of the work and the conditions arising out of it.

I. In endeavouring to throw light on the amount of employment available at any particular time and place, the Department approaches the question from two points of view: (a) the demand for labour; and (b) the supply of labour. To deal with these in a descriptive way is the purpose of a considerable portion of The Labour Gazette—the monthly journal of the Department and its chief medium of publication. More particularly, the Gazette contains each month a detailed report as to the state of employment in the chief occupations in all localities with a population of 10,000 and upward throughout the Dominion. A series of fixed terms is used in this

connection (fair, active, very active; busy, very busy; quiet, very quiet; dull, very dull); but no attempt is made to express these terms numerically.

In addition, the demand for labour may be illustrated indirectly under four main headings, namely: (1) Statistics of industrial activity and production, including a large variety of statistics of crop yields, fishery catches, lumber cuts, mining outputs, manufacturing production, etc.; (2) Statistics of construction, including railway construction, civic improvement work and general building; (3) Statistics of transportation, such as canal and harbour returns, railway traffic and earnings, etc.; (4) Statistics of trade, foreign and domestic.

The supply of labour is also indirectly illustrated by the above and by statistics of (1) population—including immigration and emigration; (2) trade disputes; (3) unemployment generally.

On all the above points a continuous record is maintained in *The Labour Gazette*. The statistical matter included falls under two headings: (1) That which is secured from other Government Departments, the returns being edited and interpreted to meet the Government's view-point. For example, a monthly review of the immigration movement, based on returns received from the Immigration Branch, is published; a monthly summary of trade, based on statistics received from the Department of Customs; monthly reviews of current statistics in the various industries, obtained from the authorities issuing the same, to which is added a considerable body of interpretative and illustrative material obtained through a carefully organized clipping bureau, which culls from the Canadian Press all references to some forty industrial and economic topics. (2) The more essentially 'labour' statistics published in the *Gazette*, as showing the state of the labour market, prepared wholly in the Department. The monthly review of trade disputes is an example. In collecting the information contained in this article the Press of Canada is closely scanned for references to labour disputes. As soon as the existence of a dispute is brought to the attention of the Department, a communication and form are at once sent to both parties of the dispute. On replies received and on information forwarded in similar form by correspondents of *The Labour Gazette* or other officers of the Department, the statements appearing in the *Gazette* are based. Other features, which may be grouped in this connection, are monthly and annual reviews of building operations and a monthly list of fires.

The subject of unemployment has never been statistically treated in Canada. The method pursued by the Labour Department of the British Board of Trade in securing monthly returns from the trade unions is rendered difficult by the comparatively minor strength of the Canadian unions and their reluctance to furnish regular information. In any event the problem is not as pressing in Canada as in the older countries.

II. Coming to the second division of the subject, namely, statistics relating to the nature and conditions of employment, a wide field is opened. Several of the standing features of *The Labour Gazette*, such as the monthly record of legal decisions affecting labour, the monthly reviews of important reports of departments and bureaux received at the Department, may be regarded as falling under this heading. To these may be added the continuous record of proceedings under the Industrial Disputes Investigation Act and the reviews of current labour legislation, Dominion and Provincial, published annually in the *Gazette*. Moreover every issue contains special articles designed to illustrate labour conditions in one branch or another of Canadian industry.

The subjects treated statistically under this heading are as follows:

(A) **Statistics of Industrial Accidents**, which show the relatively hazardous nature of different occupations. These are published monthly in *The Labour Gazette*, the method of compilation being as follows: The newspapers of the Dominion are clipped for all references to employees killed or injured in the course of their employment. By arrangement with the departments charged in the several provinces with the administration of the factories, shops and mines acts, etc., copies of the official returns of accidents made by employers each month in accordance with the law are also

received. The correspondents of The Labour Gazette in the several cities of the Dominion furnish regular reports. To this list of sources may be added the Board of Railway Commissioners for Canada. In all cases the information is forwarded on a special form. In the case of the more serious accidents, the Department frequently communicates directly with the persons affected. A table of all fatal accidents recorded is published each month in The Labour Gazette with an accompanying analysis in which the number and character of the non-fatal accidents are set forth. An annual review with charts is published in the Annual Report of the Department.

(B) **Statistics of Labour Organizations and Employers' Associations** designed to show the extent to which different branches of employment are affected by such movements. An annual directory of labour organizations of Canada is now being published by the Department, and a similar record of employers' associations is in process of compilation.

(C) **Statistics of Wages and Cost of Living.** To cover the subject of wages adequately from the Department's point of view, two classes of statistics are necessary: (1) of actual rates of wages and hours of labour; (2) of cost of living, the latter being necessary for the interpretation of the former, that is, for arriving at real as distinguished from nominal wages.

In the treatment of nominal wages, several investigations into current wages and hours in certain trades and localities have been conducted. For seven years past also a statistical record has been maintained of all changes in wages and hours of which information was received at the Department. A large number of industrial agreements, including schedules of wages, have also been printed, while some light is thrown on the subject of wages in the construction trades by the publication from month to month of various fair wages schedules, prepared by the Department and inserted in Government contracts.

In addition to the above, it is now the intention of the Department to carry out a comprehensive investigation from year to year into the course of standard wages in the most important occupations throughout Canada. This will increase the efficiency of the records now maintained, and will place the whole matter of the Department's treatment of this subject on a systematised and final basis. By way of preliminary to this step, an investigation, on a sufficiently wide basis both as to trades and localities, is being carried out into the course of wages in Canada during the past twenty years. In this way, it is expected to show by the method of index numbers, what the leading tendencies in the wages movement in Canada have been since 1890. The investigation, as planned, will lend itself to being carried forward from year to year.

To the question, How to deal statistically with 'cost of living'? the answer is in the first place by means of prices.

Prices are of course wholesale and retail. These are quite different phenomena to the economist and statistician. The former may be said to reflect the commercial and the latter the domestic life of the community. Retail prices as representing the final cost of commodities to the consumer are more directly valuable to the student of cost of living. Moreover they have this advantage that a comparatively small list of articles, say, thirty, suffices (if rentals be included) to represent four-fifths of the expenditures of the average family. Notwithstanding this fact, however, they are very difficult to handle, owing to the necessity of obtaining quotations over a wide area, local conditions having a strong influence on the prices fixed by the middleman. Wholesale price quotations, on the other hand, are fixed usually at one centre. In employing them, a much larger list of articles must be covered than in the case of retail. For example, the single item of rent in a family budget covers the hundreds of articles in a wholesale price list which enter into the construction of a dwelling. Again, wholesale and retail prices differ in the extent to which they are affected by passing influences. Wholesale prices are very sensitive; retail prices

are comparatively stable. Inasmuch however as retail prices follow wholesale in the long run, the latter are valuable as reflecting industrial and trade activity and as throwing additional light on the amount of employment available.

The Department has already completed the primary work of investigation in the field of wholesale prices, the results having been published in a special report issued in 1910. In this report the course of prices from 1890 to 1900, inclusive, for two hundred and thirty articles was traced, the employment of index numbers enabling the relative fluctuations and changes in the general prices level to be measured. This record is being maintained from month to month, with a detailed review at the end of each calendar year. In the matter of retail prices, a beginning has been made by the selection of a list of commodities entering largely into domestic consumption and the obtaining of reliable monthly quotations for the articles in question from cities of 10,000 population and upward throughout the Dominion. These are tabulated in *The Labour Gazette*, the Department confining its efforts for the time being to the securing of trustworthy current quotations. It is the intention ultimately to carry this record backward to 1890, and in this way, by the same methods that were employed in the investigation into wholesale prices, to present a parallel record for retail prices throughout the Dominion. The same method of analysis will be applied to the forward record of retail prices, and the Department will thus be able to throw light on at least some phases of the problems associated with the fixing of prices in Canada.

Prices, however, by no means exhaust the subject of cost of living. The phrase 'cost of living' itself contains two ideas, 'cost' and 'living.' Standards and conditions of living differ as between individual and individual, as between class and class, and as between locality and locality. Especially is this true in a far-extending country like Canada. A careful study of family expenditures and actual living conditions under such headings as diet, clothing, housing, recreation, etc., in the different industrial centres of Canada is therefore a necessary preliminary to a proper understanding of the information as to cost of living presented under the heading of 'prices.' Nothing in this connection has as yet been attempted by the Department.

It may also be pointed out that statistics on such subjects as wages and prices are frequently used for international comparisons and that the arrangement of some basis between the leading countries of the world is urgently called for at the present time. Steps to this end have already been taken by the United States Bureau of Labour, and it is hoped within a short time to secure an interchange of notes between Canada, the United States, and the three largest industrial countries of Europe—Great Britain, Germany and France.

FINANCE.

Banks. The statistics of banks are issued once a month by the Department of Finance, the form being prescribed by act of Parliament and being designed to keep a close record of the operations of the different institutions. The absence of inspection makes the accuracy of the returns depend upon the sworn statements of the bank officials. The Department also issues annually lists of all the shareholders of all the banks.

Insurance. The Dominion Department of Insurance issues two main volumes of statistics of insurance annually, as follows: Vol. I, on fire insurance companies and other than life insurance companies; Vol. II, on life insurance companies. A third report is an abstract of the statements contained in Vols. I and II, issued in anticipation of final returns and subject to correction.

The question of jurisdiction as between the Dominion and the Provinces bears, as in so many other instances, on the matter of insurance statistics. Under the British North America Act, trade and commerce is assigned to the Dominion Parliament, whereas property and civil rights, involving private contracts, are placed

under the control of the provincial legislatures. Up to the present no final decision has been made as to under which of these headings insurance falls.

It is the fact, however, that the bulk of the insurance business of the country is conducted under the Dominion Insurance Act, *i.e.*, under licenses obtained from the Dominion Department. These licenses confer the right to operate all over Canada unless such right is specifically restricted. It still remains necessary, however, for companies operating under a Dominion license to comply with the provincial laws where such exist. Ontario, Quebec and Manitoba have insurance acts administered by insurance departments which have been in operation for some time. More recently British Columbia and Saskatchewan have passed similar legislation, which will involve the early creation of insurance departments. Alberta, on the other hand, has passed an act which practically hands over the right of insurance legislation to the Dominion by refusing to allow any company to operate within the province except under a Dominion license. The three Maritime Provinces have no insurance acts, the general business of insurance being vested in each case with the Attorney-General and combined with general company administration. Ontario, Quebec and Manitoba issue insurance reports, and it is to be presumed that the new departments of British Columbia and Saskatchewan will follow this example. In the Maritime Provinces insurance statistics are combined with those of other companies' operations.

From the above it follows that the insurance statistics of Canada are incomplete and are incapable under existing conditions of being more than approximately estimated. The statistics issued by the Dominion Department cover only the operations of companies doing business under Dominion license. A large number of companies which operate under provincial license alone are not represented in these returns, the number amounting to over one hundred in the case of Ontario, this not being inclusive of friendly societies. Again, the statistics issued by the provinces are prepared from different schedules and do not always cover the same details. They are thus incapable of combination with the Dominion returns or with each other, with the result that, as stated above, no comprehensive report on the insurance business of the Dominion is at present available, nor is the public readily able to compile such a report from the different documents now issued.

The Dominion Insurance Department could, with some extra labour, request a return from the companies which are operating solely under provincial license, the return to be sought on the schedules used to collect information as to Dominion companies. It is true that the Department has no statutory authority to demand such a return. By an addendum of this nature, however, to the Dominion report each year complete information concerning the insurance business of the country would be at any time available.

At the recent Census a return of insurance carried was, for the first time, required, and was provided for in the schedule of population at the instance of the Department of Labour. The following is a copy of the instruction to enumerators for obtaining the information:

128. Insurance held at date. If any person, male or female, carries insurance upon his or her life, whether in an 'old line company,' 'an assessment company' or 'fraternal organization,' the total value of the policies in force at June 1, 1911, will be entered in column 30, and in column 31 the amount of insurance carried against accident or sickness should be recorded. In column 32 the total cost per year of the insurance represented in columns 30 and 31 for the twelve months immediately preceding the date of the Census, namely, June 1, 1911, will be entered.

On Schedule No. 2 (Mortality, Disability and Compensation) information was required as to compensation by insurance for loss of life, for sickness or injury during the census year, and an instruction to the enumerators (No. 157) governs the case.

It is urged that for insurance purposes the ages of the blind should be compiled by quinquennial rather than by 20 year periods for ages of 20 years and upwards as in Vol. IV of the Census of 1901.

Friendly Societies. Societies such as the Ancient Order of Foresters and the Royal Guardians, who have licenses from the Dominion Insurance Department to carry on the business of life insurance and sick benefits report thereon to the Department. Other Societies, such as the Independent Order of Foresters, the Canadian Order of Woodmen of the World and the Catholic Mutual Benefit Association, who have licenses or are registered to conduct business in Canada under the assessment plan, also report to the Department. The reports of all these societies, with statistics, are contained in the Annual Report of the Superintendent of Insurance. In the province of Ontario fraternal societies, such as the Ancient Order of United Workmen, the Canadian Order of Chosen Friends and the Canadian Order of Home Circles make returns to the Inspector of Insurance and Registrar of Friendly Societies for Ontario, and their statistics are published in his Annual Report.

Building Societies, Loan and Trust Companies. The Department of Finance issues an annual report on the affairs of Building Societies and Loan and Trust Companies. All such societies and companies licensed by the Dominion Government are required to make annual reports of their proceedings, and it is from these data that the report issued by the Department is chiefly compiled. In addition, however, a number of companies operating under provincial charters send in their annual statements to the Department. In such cases the Department publishes these and includes their totals with those of Dominion licensed concerns. It accordingly happens that the totals of the Dominion report are not continuous, seeing that certain of the provincial companies may be included in one year and omitted in another.

Joint Stock Companies. Records of incorporations under the Companies' Acts of the Dominion and of the Provinces are kept; but no statistics of the operations of such companies are published, though in the case of Ontario the act requires an annual statement from every company chartered. A comprehensive report on joint stock company operations in Canada would only be possible by the amendment of several of the Companies' Acts (including the Dominion Act) to require an annual statement to be furnished by each company to the authority issuing its charter.

EDUCATION.

Under the British North America Act education is exclusively a provincial matter, and there is an Education Department of the Government in each of the nine provinces. The provincial Education Departments publish more or less elaborate annual reports with statistics of colleges, schools, teachers, salaries, pupils, fees, attendance, etc. Those afford data for a comparative statistical review of educational effort in the Dominion as a whole, and such a review could be made without interfering with provincial arrangements.

In the older series of the Statistical Year Book of Canada, which ended with 1904, a section was devoted to education, and the education statistics of each of the provinces, with, in some cases, totals and averages for Canada, were given for a series of years.¹

Education statistics are also collected by the decennial Census. They include on Schedule 1 (Population) particulars of attendance, ability to read and write, language and cost of education for persons over sixteen years of age, and on Schedule 10 (Churches, Schools, Colleges and other Institutions), the kind or class of school, number of rooms, number of teachers and pupils, value of buildings and land for

¹ The Statistical Year Book of Canada, 1904, pp. 661-689.

high, public, separate or private schools and colleges, academies, universities, etc. The statistics collected in 1901 were published in Vol. IV (Miscellaneous Statistics) of the Census of that year, and they comprised tables showing the school attendance and educational status of persons five years old and over and the number of schools, colleges and universities, with the number of rooms, of teachers and professors, and of pupils and students. The education statistics collected in 1911 have not yet been compiled.

In 1909 a General Education Census was taken throughout the Argentine Republic, being the second of its kind of national character. The results were published in three large volumes. Vol. I dealt with the School Population and Vol. II with School Statistics. Vol. III consisted of monographs by different educational authorities.

In each of the Maritime Provinces Annual Reports are published by an officer styled the Superintendent of Education. In Quebec the Annual Report is issued by a Superintendent of Instruction. In Ontario there is a Department of Education presided over by a Minister, who issues an Annual Report. The three Northwest Provinces have each a Department and Minister of Education. In British Columbia there is a Department of Education presided over by a Minister, and a Superintendent of Education issues an Annual Report.

There is no general uniformity in the presentation of the statistics of education; but generally speaking there is a similarity between the educational systems of the three Northwest Provinces. British Columbia has its own system. It is, however, easily possible to abstract from the annual educational reports of the nine provinces certain statistics which each supplies, and which brought together would permit of useful comparisons between the different provinces and between the whole of Canada and other Dominions of the British Empire, or other countries of the world. Such statistics could for example deal in a fairly comprehensive way with the elementary school system of Canada by giving annually the number of teachers by sex and their total and average salaries, total and average attendance of pupils by sex and the total government expenditure, with costs per capita, etc. They could also show, as far as possible, similar particulars in respect of collegiate institutions, high schools, model and normal schools, and the universities or other institutions of higher education.

Doubtless each of the provincial Education Departments could and would supply statistical information upon schedules issued to them for the purpose, such information being either the same as is now contained in their annual reports, or, if necessary, supplemental thereto.

These statistics would still leave out of account the large number of private or proprietary schools, whether for boys or girls, for which only the Census figures are available.

CROWN LANDS.

The term 'Crown Lands' of Canada is used in reference to those public lands which are under the immediate control of the Dominion or Provincial Governments. The Provincial Governments of Ontario, Quebec and the Maritime Provinces have absolute control of their crown lands. In British Columbia the Provincial Government has control of the crown lands, with the exception of $3\frac{1}{2}$ million acres of land to be located by the Government of Canada in that portion of the Peace River district of British Columbia lying east of the Rocky Mountains and adjoining the province of Alberta and those public lands comprised within the tract of land known as 'the Railway Belt.' The Government of Canada has control of the crown lands in the provinces of Manitoba, Saskatchewan and Alberta and in the Northwest Territories of Canada, including the Yukon; also the $3\frac{1}{2}$ million acres of land mentioned above in British Columbia and the tract of land in British Columbia known as 'the Railway Belt.'

All crown lands under the control of the Dominion Government are held in trust for the people of Canada, whereas those crown lands controlled by the Provincial Governments are the special asset of the people of the Province.

It is only within recent years that the public has begun to realize the immense wealth of this undeveloped domain. As a result of the interest taken by the Canadian people in this subject, the Dominion and Provincial Governments have passed legislation aiming at the preservation of the forests, the prevention of forest fires, the utilization of the timber areas and generally all matters connected with the resources of the country.

In connection with the administration of the crown lands of the Dominion under the Dominion Lands Act, considerable information of a statistical character is published by the Department of the Interior. The statistics published necessarily cover a large number of subjects, viz., the number of acres of land in the Western Provinces, surveyed and unsurveyed; the number of homestead entries and letters patent issued; the land sales by railway companies having Government land grants and by the Hudson's Bay Company; the sale of Dominion, School and Ordnance lands; the number of saw-mills operating under Government licenses, with the capacity of same per 10 hours, and the amount of lumber manufactured; the quantity and value of timber cut under timber licenses; information relative to the sale and lease of lands for mining and other purposes.

In addition to the above, the Department of Indian Affairs publishes statistics relative to the industrial conditions of the Indians in connection with the administration of the Indian Reserves of Canada.

The Ontario Government publishes statistics showing the number of persons locating land and acres located; the number of purchasers and of acres sold; the number of patents issued under 'The Free Grant and Homestead Act'; the number of acres of crown lands sold or leased; the quantity and description of timber cut on areas covered by timber licenses.

The Government of British Columbia publishes statistics relative to the quantity of timber cut under license on the crown lands of the province; the acreage of Crown Grant Timber with assessed value; the number of acres leased for all purposes, with rentals; and the number of acres of crown lands surveyed.

The New Brunswick Government publishes statistics showing the quantity and kinds of timber cut on the crown lands; the amount of stumpage dues paid; the land sales for the year; and the receipts from timber licenses.

JUSTICE.

Criminal Statistics. These have been collected annually under statutory authority since 1876 and have been published in an annual volume for the twelve months ended September 30 each year as an Appendix to the Report of the Minister of Agriculture. The legal provisions at present applicable to these statistics are contained in Part IV (Criminal Statistics) of the Census and Statistics Act 1905 (4-5 Edward VII, c. 5). They provide that the clerk, or if there is no clerk, the judge or other officer presiding over every court or tribunal administering criminal justice, shall before the end of October in each year fill up and transmit to the Minister for the year ending the thirtieth day of September preceding such schedules as he receives from time to time from the Minister relating to the criminal business transacted in such court or tribunal'. Fees are paid for the returns made at certain specified rates prescribed by the Governor in Council under the authority of section 43 of the Act. The collection and compilation of these statistics have for many years been in the hands of the Secretary of the Census and Statistics Office. The tables are prefaced by an analytical introduction with comparative figures of the previous year. A special statistical treatment of the Juvenile Delinquents Act of 1910 is contemplated as an additional feature of this introduction. These statistics thus published annually under statutory authority

by the Census and Statistics Office have been gradually perfected, and present valuable material for sociological investigation. They furnish as it were the raw materials for statistical studies such as might form part of the work of a Central Statistical Office.

Criminal Statistics in Canada Year Book. Tables extracted from the Annual Report on Criminal Statistics are published in the Canada Year Book under the heading of Offences and Crimes, and the principal crime statistics of the Report on Penitentiaries are given therein under the heading of 'Penitentiaries.' The former statistics relate to the whole Dominion for the year ending September 30, the latter only to the six penitentiaries for the fiscal year ending March 31. In the old edition of the Year Book published before 1905 statistics of the number of persons confined in provincial prisons were taken either from published returns of the Provincial Governments, or, as in the case of New Brunswick, were specially collected from the county sheriffs.

Statistics of Penitentiaries. The Department of Justice publishes an annual report of the two Inspectors of the six penitentiaries of Canada. The Inspectors' report gives the population of these penitentiaries, the movement of this population and figures as to paroles, pardons, urban criminality, nationality of convicts and particulars of revenue and expenditure. In addition there are some 13 Appendices, consisting of reports from various officers of each penitentiary, and of financial statements, all of which are more or less statistical in character. Two of these Appendices are entitled respectively 'Crime Statistics' and 'Labour Statistics.' The former (Crime Statistics) deals for each penitentiary with the movement of convicts for the year and for comparative years, recommitments, where sentenced, crimes committed, the duration of sentence, occupations, nationality, age, education, social habits, civil condition, race, pardons, death, insanity, punishment, creeds, escapes and deportation of convicts. The latter (Labour Statistics) show for each penitentiary the nature of the different industries, the number of days, the rate of payment and the total earnings.

Royal Northwest Mounted Police. The annual reports of the Royal Northwest Mounted Police include statistics of indictable offences where the accused have been committed for trial, and of summary convictions dealt with by the Force, but not those in cities and towns having their own municipal police. The records relate only to the territory covered by the Force, viz., the provinces of Saskatchewan and Alberta, the Northwest and Yukon Territories. The report covers the year ending September 30.

Common Jail Statistics. The number of commitments to the common jails are included in the Annual Criminal Statistics; but more elaborate jail statistics are contained in the reports of some of the provinces, especially those of Quebec and Ontario, which include also statistics of reformatories and similar institutions.

HOSPITALS, CHARITIES, ETC.

Statistics relating to Hospitals, Charities, etc., are collected at each decennial census, and annual statistics are published by the provinces, but upon no plan that is common to all of them.

PUBLIC DEFENCE.

Militia. Statistics relating to the Dominion Militia are published annually in the report of the Militia Council for the fiscal year, and two comparative tables constructed from these statistics are published in the Canada Year Book for a series of five years.

They give the number of officers and men and of horses trained as well as details of the Militia revenue and expenditure for the same five years.

Royal Canadian Navy. The Department of the Naval Service, established in 1910, published in June 1911 its first Annual Report, this being for the year ended March 31, 1911. This report gives a financial statement of the appropriations and expenditure, the number of recruits, a description of the vessels of the Fisheries Protection Service, including their measurements, tonnage, speed and complement, and statistics of the radio-telegraphic service and of the stations of the Marconi Wireless Telegraph Company of Canada. The second Annual Report for the year ended March 31, 1912, was published in 1912.

STATISTICAL PUBLICATIONS.

Incidental reference has been made in the foregoing to various periodical publications of a statistical character. Other important statistical publications are the Canada Year Book and the Census and Statistics Monthly.

The Canada Year Book for 1911 is the seventh annual issue of the second series which was started in 1905, and which superseded the Statistical Year Book of Canada, an annual publication from 1885 to 1904 of the Dominion Government. As now edited its contents are limited to the official statistics of the Dominion Government, printed in tabular form and preceded by a brief review of the principal events of the year that are of historic and economic interest. The scope of this publication is much restricted as compared with the volumes prior to 1905 and as compared with similar publications of other countries.

The Census and Statistics Monthly was established in 1908 as the medium for publication of the monthly crop reports and annual estimates of agricultural production then instituted. In addition to these reports it contains every month Departmental Notes consisting of reports from different branches of the Department of Agriculture, abstracts from the crop reports of other countries, including the reports of the International Agricultural Institute, notes on the weather and the prices of colonial and foreign produce in British markets, with a variety of special articles and reviews on practical, scientific or economic agriculture.

The Publications Branch of the Department of Agriculture now publishes a monthly Bulletin, which contains not only the statistics and reports of the International Agricultural Institute, but also crop reports of other countries, notes on the weather and a great deal of the same kind of material published in the Census and Statistics Monthly as well as the Canadian crop reports copied directly therefrom.

The arrangements of the International Agricultural Institute for its representation in the adhering countries are described by the Institute as follows:

The Agricultural Statistical Office of the International Agricultural Institute has in each adhering country as correspondent either a person, or a Special Office designated by the Government of that country; this is generally the Agricultural Statistical Office or the General Statistical Office. In this way the Statistical Office of the International Agricultural Institute finds itself to be the centre of a truly international statistical organization and can thus obtain sure and rapid information.¹

On two occasions the Geographic Branch of the Department of the Interior has published a small Resource Map, preceded by a number of tables under the title of 'Statistics of the Dominion of Canada.' The Chief Geographer states that the main purpose of this publication was to supply information in a handy form for the use of inquirers and especially for use in schools. It is not a regular publication of the Branch.

¹ *Annuaire International de Statistique Agricole*, 1910, p. xliii, Rome, 1912.

METEOROLOGY.

The Dominion Meteorological Service, which forms part of the Department of Marine and Fisheries, has its headquarters at Toronto. Its publications include daily weather bulletins and forecasts, a monthly weather map, a monthly review and an annual climatological report.

STATISTICAL ORGANIZATION IN OTHER COUNTRIES.

In most European countries there is in addition to the statistical branches of the different Government Departments some kind of central statistical control. Thus in France, where the quinquennial census is taken by the General Statistical Service of the Department of Labour and Social Providence, there exists a 'Conseil Supérieur de Statistique,' which exercises a general supervision over all official statistics published. It was modelled on the Central Statistical Commission of Belgium. A similar Council exists in Italy. There are Central Statistical Offices in Germany (Kaiserlich Statistisches Amt), in Austria (K.-K. Statistische Zentralkommission), Holland (Central Statistical Commission) and Russia (Central Statistical Committee).

United Kingdom. There is not in the United Kingdom any Central Bureau of Statistics. While the Board of Trade is the Department concerned with general statistical work probably more than any other, several Departments of State prepare and publish statistical information dealing with matters falling within the scope of their respective functions. Thus while the Board of Trade publish statistics relating to the foreign trade of the United Kingdom (jointly with the Customs and Excise Department), imports and exports, navigation and shipping, the colonial and other possessions of the United Kingdom, foreign countries, emigration and immigration, railway capital and traffic, railway accidents, wrecks and casualties to shipping, census of seamen employed, wages and hours of labour, labour exchanges, trade unions, strikes and lock-outs, tramways, insurance companies, patents, designs and trademarks, bankruptcy and other commercial and industrial subjects, as well as the census of production, statistical work is also transacted by the following Departments among others: Board of Customs and Excise, Board of Inland Revenue, General Post Office, Home Office, Local Government Boards of England and Wales, Scotland and Ireland, Board of Agriculture and Fisheries for England and Wales, Board of Agriculture for Scotland, Department of Agriculture and Technical Instruction for Ireland, Fishery Boards for Scotland and Ireland, Lunacy Commissions for England and Wales, Scotland and Ireland, National Debt Office, Registry of Friendly Societies, War Office, Admiralty, General Register Offices of England and Wales, Scotland and Ireland, and the Boards of Education for England and Wales, Scotland and Ireland.

There is no advisory body in connection with the statistical work of the Board of Trade; but the principal of the Statistical Office of the Board of Customs and Excise and a representative of the Commercial Department of the Board of Trade report annually upon the changes required in the statistics of imports and exports in order to render them more useful to the commercial public. The report of the Committee is submitted for approval to the Board of Trade and the Commissioners of Customs and Excise and the Treasury. The Commercial Department of the Board of Trade, which contains several statistical experts among its staff, is appealed to for advice by the other Departments of the Board of Trade in connection with their statistical work as occasion may require.

The statistics published by the Commercial Department of the Board of Trade, which are tabulated directly from original materials, are those relating to navigation and shipping, railways and the cotton statistics. The import and export statistics of the United Kingdom, issued by the Board of Trade, are tabulated by the Board of Customs and Excise directly from original materials. The principal returns compiled

by the Labour Department are also taken from original returns, viz., those relating to emigration and immigration, wages and hours of labour, strikes and lockouts, trade unions, etc.¹

The Census is taken decennially under a special act passed for the purpose on each occasion. A census of production was taken for the year 1908 under the Census of Production Act, 1906, by the Board of Trade, and a similar census will be taken periodically in future. Agricultural statistics are collected annually in the month of June by the Board of Agriculture and Fisheries from all occupiers of more than one acre through the agency of the local officers of the Inland Revenue under the Commissioners of Customs and Excise. There are about 500,000 of these occupiers and all but about 2½ p.c. of the total number duly fill up and return the forms. Recently a separate Board of Agriculture was created for Scotland, and the new Board now collects the Scottish Agricultural Statistics.

In 1909 a Select Committee of the House of Commons on Publications and Debates took evidence on the general question of the preparation of official statistics, and the Royal Statistical Society through its Honorary Secretary (Mr. R. H. Rew, C.B.) submitted various recommendations drawn up by a Census Committee of the Society. These included (1) the establishment of a permanent Census Office; (2) the holding of a quinquennial enumeration by sex and age in addition to the general decennial census; and (3) the formation of a Consultative Committee composed of the statistical officers of the Departments dealing with finance, industries, trade, pauperism, education and similar subjects. It was stated that the creation of such a body would, in the opinion of the Society's Census Committee, effect a material advance in the direction of the co-ordination, simplification and improvement of official and Parliamentary Statistics.

United States. In the United States the decennial census is taken by the Census Bureau of the Department of Commerce and Labour, and provision has recently been made for a quinquennial census of agriculture and live stock. Annual estimates of the areas and production of the principal field crops and of the numbers of live stock are published by the Bureau of Statistics of the Department of Agriculture, and this Bureau also publishes monthly reports on the condition of growing crops, records of agricultural prices and a great variety of agricultural statistical information. A Bureau of Statistics of the Department of Commerce and Labour is charged with the collection and publication of statistics of foreign and internal commerce. In 1908 the United States Government appointed a Committee to inquire into the statistical work of the Department of Commerce and Labour and to report with regard to statistical reorganization. The Committee recommended *inter alia* that an advisory or consultative Committee should be appointed, and on this subject the report reads as follows:

Committees of this kind have frequently been recommended by international statistical congresses and such committees now in existence in several European countries have done admirable work. The duties of such a committee, if established, should be deliberative and advisory, rather than executive. A good example of such duties is that of the Central Statistical Commission, established in France by the decree of 1885. The significant parts of this decree are as follows:

A Statistical Commission is hereby established in the Department of Finance. Its powers are advisory and it shall be entitled to give advice:

1. Regarding the sources, methods, schedules, and instructions which are to be used in the various statistical offices, as well as regards the provisions for securing uniformity in statistical publications.

¹ The information relating to the United Kingdom is based chiefly upon a statement specially furnished by the Commercial Department of the British Board of Trade.

2. Regarding the preparation and publication of the 'Annuaire Statistique de la France,' which contains the summary of official statistics.

3. Regarding the plans for and the publication of results of new statistical inquiries.

4. Regarding the relation between French statistical offices and those of foreign countries.¹

Egypt. Although Egyptian official statistics cannot at present compare in completeness with those of more advanced countries much progress has been made of late years. The work and development of the official statistics of Egypt is the subject of a comprehensive article in 'L'Egypte Contemporaine' of May, 1912, by Dr. I. G. Lévi, Inspector of the Egyptian General Statistical Service. The first two of the three following paragraphs, translated from Dr. Lévi's article, are interesting for their general appreciation of the value of scientifically compiled and duly co-ordinated official statistics, and the third is quoted for its description of the functions of the Central Statistical Committee, as created in 1910 by the Egyptian Government:

(1) The State is like an army on permanent campaign. It must always be surrounded by advance posts and watchful observers indicating and recording all that passes both within and without. These advance posts, these scouts, are represented in the State by Statistical Bureaux whose mission it is to note the effects of present action, to reveal the nature of the ground for future operations, to signify the approach of danger and finally to show the direction towards which government authorities should turn their attention (p. 330).

(2) It must not be forgotten that the various manifestations of a nation's activity, like the functions of living beings, form a harmonious and indivisible whole. The concrete figures which express them would therefore lose their importance and significance if they stood alone. On the contrary in proceeding upon principles of homogeneity the various statistical works of a country mutually complete themselves and by virtue of the strict ties which keep them indissolubly united they can adjust themselves like the more or less numerous parts of a machine (pp. 337-8).

(3) The Council of Ministers of the Egyptian Government decided on January 16, 1910, upon the creation of a Central Statistical Committee uniting within itself the chiefs of the different State Departments and notably those of the Statistical Services of the Departments that possess them. The object of this Committee is (1) to centralise the opinions of the different State Services upon statistical matters; (2) to insure the exchange of information and of ideas, in order to obtain better results in the statistical work of the Government; (3) to advise the Government generally upon statistical questions (p. 330).

References. The following is a list of references to articles and reports bearing upon the organization of official statistics:

UNITED KINGDOM.

(1) Treasury Committee on Official Statistics 1877-79 (Three Reports).

(2) Report of Committee on the Census 1890 [C. 6,071].

(3) Inaugural Address of J. B. Martin, President of the Royal Statistical Society, 1896, including summary of the steps taken in other countries for the development of statistical research and the organization of official statistics (Journal, R.S.S., Vol. LIX, 1896, pp. 579-628).

¹ See 'Statistical Reorganization': Report of a Committee appointed by the Secretary of Commerce and Labour to inquire into the Statistical Work of the Department and Statements of Witnesses before said Committee, Washington, U.S.A., March 2, 1908.

(4) The Improvement of Official Statistics by A. L. Bowley (Journal R.S.S., Vol. LXXI, 1908, pp. 460-479).

(5) Report of the Census Committee of the Royal Statistical Society, 1908-09 (Journal, R.S.S., Vol. LXXII, 1909, pp. 574-593).

(6) Condensed Report of Evidence of Royal Statistical Society (Journal, R.S.S., Vol. LXXII, 1909, pp. 731-743).

(7) Report of the Select Committee of the House of Commons on Official Publications (No. 285 of 1909).

UNITED STATES.

(8) Report on Statistical Reorganization, Washington, U.S.A., March 2, 1908.

EGYPT.

(9) 'La Statistique officielle en Egypte, ses travaux et son développement,' by Dr. I. G. Lévi in 'L'Egypte Contemporaine,' No. 11, mai 1912, pp. 317-340.

INDEX.

PAGE.	PAGE.
Absentee family card..	28
Accidents, statistics of..	23, 51, 60
Accounting of municipalities.. . . .	33
Adulteration of food..	59
Agricultural statistics..	14, 34, 36, 42, 43, 70
— statistics in Great Britain.. . . .	70
— statistics in United States.. . . .	70
— statistics of the Indian Reserves..	42
Alberta, agricultural statistics and crop-reporting in..	39
Ancient Order of Foresters.. . . .	64
Appointment of officials..	12, 25
Argentina, general education census in.	65
— Trade of..	58
Australia, census of..	29, 30
Australian Bureau of Statistics.. . .	13
Banks..	62
Beet sugar industry, bulletin on.. . .	49
Belgium, census of..	30
Bertillon classification of causes of death..	32
Board of Railway Commissioners.. . .	51
— of Trade, British..	69, 70
Bowley, A. L., on a central thinking office..	9
— on the improvement of official statis- tics..	72
British-Canadian trade..	57
British Columbia, agricultural statis- tics and crop-reporting in.. . . .	40
British North America Act.. . . .	64
British-United States trade.. . . .	56
Building construction..	50
Canada Year-Book..	24, 25, 67, 68
Canadian, British and United States trade..	57
Canal statistics..	17
Census and Statistics Acts.. . . .	9, 27, 30, 31, 34
Census and Statistics Monthly.. . . .	68
Census, British..	70
— Canadian..	11, 24, 27
— complexity of the Canadian.. . . .	11
— methods in other countries.. . . .	29
— of Eastern Canada, 1907.. . . .	34
— of manufactures in Canada, 1905..	49
— of manufactures in Massachusetts..	49
— recommendations respecting the..	12, 25
— statistics of mining..	49
— statistics of production..	34
Central thinking office, A..	9
— Statistical Commission in France..	70
— Statistical Committee in Egypt.. .	71
— Statistical Office..	9, 24
Chosen Friends, Canadian Order of..	64
Cities, statistics of in United States..	34
Classification of customs statistics..	18, 20, 24
Closed House Card..	28
Commerce and Labour, U.S., Depart- ment of..	70
Commerce on Great Lakes, U.S. Domes- tic..	58
Commerce, Trade and..	17, 52
Commercial Department of British Board of Trade..	69, 70
Commercial statistics of agricultural commodities..	54
Commission of Conservation and vital statistics..	12
Communication, Transportation and..	51
Compensation, disability and mortality..	63
Comptroller of Railway Statistics, Re- port of..	51
Conference re cholera and vital statis- tics, 1893..	32
Conferences with provincial authorities recommended..	15
Conservation, Commission of and vital statistics..	12
Construction, Building..	50
Consultative Committee, Proposed for- mation in Great Britain of a.. . . .	70
Co-operation with provincial govern- ments..	15
Co-ordination of statistics..	25
Copyrights..	59
Corn, British imports of, credited to Canada..	19
Correspondents, number and distribu- tion of Census Office crop-reporting..	35
Cost of living..	61
Cotton, British imports of credited to Canada..	19
Country of final destination of exports..	19
— of first origin of imports.. . . .	19
Criminal statistics..	66, 67
Crop areas, estimation of..	14
Crop-reporting..	35, 43
Crown grant timber..	66
Crown lands..	65
Customs Act, section 50 of the.. . . .	53
Customs Department..	18, 53
Dates of meetings of Commission.. . .	7
De facto system..	11, 28
Defence, Public..	67
Department of Railways and Canals..	51
Departmental Commission, Appointment of..	6
Departures from Canada, Attempts to record number of..	33
De jure v. de facto system..	11
Destination of exports..	19, 54
Diagram of Canadian statistics.. . . .	7
Differences in Government statistics of agriculture..	40, 41
Disability, mortality and compensation..	63
Discrepancies in trade returns of dif- ferent nations..	55
District inspectors for agricultural sta- tistics, proposed appointment of.. .	44
Dominion Lands Act..	66
— Meteorological Service..	69
Economic statistics..	22
Education..	23, 64
— census in Argentina..	65
Egypt, Official statistics in.. . . .	71, 72
Electric Railways..	51
Electricity..	59
Elevators and mills, collection of agri- cultural statistics by..	43, 44
Emigration statistics..	13, 25, 27, 33
Employers' Associations and labour organizations..	61
Employment..	60
Enumeration of people..	27
Evidence taken by the Commission.. .	7
Excise..	59
Exports, Destination of..	54
— from Argentina..	58

	PAGE.		PAGE.
Finance..	62	Manitoba, agricultural statistics and	
Fisheries..	16, 45	crop-reporting in..	38
Fluctuation, statistics of..	13	Manufactures, statistics of..	16, 17, 49
Food, Adulteration of..	59	Marine and Fisheries Department..	52
Foreign trade..	18	Martin, J. B., presidential address,	
Foresters, Ancient Order of..	64	Royal Statistical Society..	71
— Independent Order of..	64	Massachusetts census of manufactures.	49
Forestry..	16, 47	Meetings of Commission, dates of the..	7
France, census of..	30	Meteorological Service, Dominion..	69
— Central Statistical Commission in..	70	Meterology..	69
Franco-British trade..	56	Method of estimating crop areas..	14
Friendly Societies..	64	— of multiple correlation in estimat-	
Fruit Crop Report..	36	ing population..	13
— statistics and crop reports..	15	Migration..	27, 32
Gas..	59	Militia..	67
General Observations..	7	Mills and elevators, collection of agri-	
Geographic Branch of the Department		cultural statistics of..	43
of the Interior..	68	Mines..	16, 48
Geological Survey and statistics of min-		Mining industry, statistics of the..	48
ing..	49	Miscellaneous economic statistics..	22
Gettemy, C. F., Letter from, as to		— statistics..	23, 25
Massachusetts census of manufac-		Mortality, disability and compensation.	63
tures..	49	— tables, British..	32
Grain, Official prices of..	42	Multiple correlation, method of..	13
— Stocks of..	21	Municipal accounting, uniform..	33
Great Lakes, U.S. domestic commerce		— statistics..	13, 33
on..	58	Naval Service Department, Reports of	68
Home Circles, Canadian Order of..	64	Navy, Royal Canadian..	68
Homestead entries..	66	New Brunswick, agricultural statistics	
Household expenditure..	22	and crop-reporting in..	37
Immigrant population..	32	Nova Scotia, agricultural statistics and	
Immigration Branch, Department of		crop-reporting in..	37
Interior..	32	Observations, General..	7
Imports, origin of..	53	Ontario, agricultural statistics and	
Improvement of official statistics..	9	crop-reporting in..	37
Index number of wages movement sug-		— Bureau of Labour..	49
gested..	22	— Railway and Municipal Board..	51
Indian Affairs, Department of..	16, 42, 66	Order in Council appointing Commis-	
— Reserves, agricultural statistics of..	42	sion..	5
Industrial accidents..	60	Organization in other countries..	69
— designs..	59	— Statistical..	9, 22
— statistics of Ontario..	49	Origin of imports..	19, 53
Inland Revenue..	59	Patents..	59
Inspection of weights and measures..	59	Penitentiaries..	67
Insurance..	23, 62, 63	Population..	11, 13, 27
— returns at census of 1911..	63	Postal census of Eastern Canada, 1907..	34
Inter-censal inquiries..	31	— census of manufactures, 1905..	49
Inter-departmental Statistical Commit-		Post-censal estimates of population..	13
tee proposed..	10, 24	Post Office statistics..	52
Internal commerce of the United		Police, Royal Northwest Mounted..	67
States..	58	Prices..	15, 23, 42, 62
International Agricultural Institute..	21, 42, 54, 68	— agricultural..	15
— agricultural statistics and crop re-		— grain..	42
ports..	42	— retail and wholesale..	62
— classification of causes of death..	32	Prince Edward Island, agricultural	
— commercial statistics..	54	statistics and crop-reporting in..	36
— crop-reporting..	14, 42	Procedure of Commission..	7
International Statistical Institute..	28, 43, 49	Production, British census of..	70
Interprovincial Conference on Statis-		— statistics of..	13, 24, 34
tics..	24	Provincial statistics, 9, 12, 14, 15, 16, 17, 23, 25	
— trade..	20, 21	33, 36, 41, 43, 46, 48, 49, 51, 62, 64, 67	
Interstate Commerce Commission, U.S..	17, 51	Public defence..	67
In transitu goods..	19	Publications..	24, 25, 68
Jail statistics..	67	Quebec, crop-reporting in..	37
Joint Stock Companies..	64	— Department of Agriculture..	37
Justice..	23, 66	Quinquennial census recommended..	11
Labour Gazette..	60	Railway accidents..	51
Labour statistics..	25, 59, 60, 61	— Commissioners, Board of..	51
Lands, Crown..	65	— companies, crop statistics of..	43
Lévi, Dr. I. G., on Egyptian official		— statistics..	51
statistics..	71, 72	Recommendations of Departmental	
Live stock statistics..	14, 45	Commission..	12, 15, 20, 21, 24
Living, cost of..	22, 61		
Loan and Trust Societies..	23		

	PAGE.		PAGE.
Reference to Departmental Commission..	5, 6	Timber marks..	59
References to articles and reports on the organization of official statistics..	71, 72	Tobacco statistics and crop reports..	15
Resource Map of Department of the Interior..	68	Tonnage of Canadian vessels ..	52
Retail prices..	62	Trade and Commerce..	17, 18, 24, 52, 54, 55
Ricci, Prof. Umberto, on statistics of importation and exportation..	54	— and Navigation Returns..	18, 20, 52
Royal Canadian Navy..	67	— British Board of..	70
— Guardians Friendly Society..	64	— returns of different nations, Discrepancies in..	55
— Statistical Society..	70, 71, 72	— marks..	59
Saskatchewan, agricultural statistics and crop-reporting in..	38	Transportation..	17, 20, 25
Snow, E. C., on the estimation of post-censal populations..	13	— and Communication..	51
Statistical Branch of Department of Railways and Canals..	51, 52	Trust and Loan Societies..	23
— conditions in the West of Canada..	15, 43	Unemployment..	60
— organization..	9	Union of Canadian Municipalities..	33, 34
— organization in other countries..	69	United Kingdom, statistical organization in..	69
— publications..	68	— census of..	29
— record of Canada..	24	United States, census of..	29
— reorganization in U.S. Department of Commerce and Labour..	70, 71, 72	— Internal Commerce of the..	58
— Society, Royal..	70, 71, 72	— Interstate Commerce Commission..	17
— Year-Book of Canada..	64	— Organization of statistics in..	70
— year not uniform in provinces..	32	United Workmen Friendly Society..	64
Statistics, appreciation of scientific official..	71	Vessels on register..	52
— articles and reports on the organization of official..	71, 72	Vital Statistics..	13, 27, 32
— of fluctuation..	13	Wages..	22, 61
Stocks of grain..	21	Warehouse Commission, Winnipeg..	44
Summary of recommendations..	24	Waterborne traffic..	17
Summer cottages, exodus from cities to..	11	Weights and measures, inspection of..	59
Tariff Act..	18, 19	West Indies, United States trade with confused with Canadian..	19
— statistics..	22	West, statistical conditions in the..	15, 43
Telegraph Companies..	51	Wheat prices..	42
Temporary Home Card..	28	Wholesale prices, Report on, 1910..	62
Timber..	66	Woodmen of the World, Canadian Order of..	64
		Wright, Carroll D., opinion of late..	16
		Year-Book, Canada..	68
		Zabiello, G., on commercial statistics..	54

REPORT
OF
DEPARTMENTAL COMMISSION
ON THE
OFFICIAL STATISTICS OF CANADA
WITH
APPENDIX CONSISTING OF NOTES OF EVIDENCE

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